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SUPPLEMENTARY ILLUSTRATIONS.

ALBERTA MAGNA, December 11.

CATTLEYA MOSSIE, VARIETY RAPPARTIANA, July 10; C. SCHOFIELDIANA VAR. GIGANTEA ×, October 9.

EDEN HALL, CUMBERLAND, VIEWS OF THE FLOWER GARDEN AND CEDARS AT, November 27.

FORDE ABBEY, CHARD, VIEW OF, November 6.

ORCHID COLLECTING IN SIAM, December 25.

WINDSOR, GROUP OF PLANTS ARRANGED IN THE QUEEN'S TENT ON THE OCCASION OF THE VISIT OF MEMBERS OF THE HOUSE OF COMMONS, August 7.



THE Gardeners' Chronicle.

SATURDAY, JULY 3, 1897.

NUTMEGS.*

THE author of this book begins by saying how interesting he found the study of the Nutmeg-tree, both true and false, during a period of eight years spent in the Eastern parts of the Malay Archipelago and in New Guinea. There these trees enjoy a climate exactly suited to them, and there, in consequence, is situated the centre of their distribution. There also they take the same relation to botany that Birds of Paradise do to zoology.

The claim of the Nutmeg for consideration as an article of commerce is connected with a series of romantic stories of its discovery in times long past, of the fierce war that raged among European countries for their commercial rights, of the combat for monopoly that ended in the extermination of the natives, and the break-up of the greatest merchant-company that has ever existed. All this eventful history is interwoven with the stillness of every grove of Nutmeg-trees, and with the grand scenery of every inland lake.

With such words as these, the author commences a work which is, in its way, unique. He proceeds to treat of the history of the Nutmeg previous to the discovery of the Banda Isles, of the use that has been made of it in poetry, and of the philological history of the various names for Nutmeg and Mace.

The second part of the book is devoted to the cultivation of these spices, and includes a large amount of cultural detail and history. We are told of the strenuous endeavours made by the Dutch East India Company to preserve the monopoly, and how finally they were forced to relinquish it; and the author further reminds us of the exertions that were made with more or less success to induce the Nutmeg-tree to flourish and become naturalised in other localities. Dr. Warburg notes that at Syon House, Middlesex, very large fruits have been brought to perfection. It would be interesting to learn whether this tree is still flourishing. [No, it was removed some years since. ED.] In an appendix to this section of the book is a tabular epitome of the cultivation of Nutmegs and Mace from the years 1634 to 1894—that is, during a period of 260 years.

The third and botanical division of the book deals with the Nutmeg-tree itself, and numerous other species that merit attention from a commercial point of view.

The fourth division is concerned with the cultivation, the fifth with the trade details. Not only the species recognised in commerce, but

the false Nutmegs, and the substitutes for the genuine spice are fully considered. In an appendix to this section of the book are given detailed price-lists of Nutmegs and Mace.

The sixth section deals with the collateral products of the Nutmeg-tree, their commerce, and history. Among them are oil of Nutmeg, oil of Mace, candied Nutmeg fruits, candied Mace, and Nutmeg fruits in vinegar or salt.

In the seventh division the medicinal and aromatic products of the Nutmeg-tree are considered, and the poisonous qualities of the Nutmeg receive due notice.

In the eighth section the author considers the future prospects of Nutmeg cultivation.

Finally, there is a complete literary catalogue of some eighteen pages, which speaks well for the thorough acquaintance of the author with his subject. A very complete index greatly adds to the value of the book.

We congratulate Dr. Warburg on the completion of this work, which will serve as a model for all future books of the kind, no such complete monograph having before appeared. Everybody, be he botanist or gardener, chemist or philologist, historian, political economist, or merchant, will here find a wealth of information, whilst the general reader will find it a most interesting and instructive work to add to his library shelves.

NEW OR NOTEWORTHY PLANTS.

DENDROBIUM CEELESTE, n. sp., Lohr.*

The habit much resembles that of *Dendrobium Victoriae* Regins (ante, p. 399, vol. xxi.), although from quite another locality, many hundred miles distant. The two species are never found growing together. Its habitat is about 2500 m. elevation (8125 feet), amongst quite European vegetation. Oaks, Rhododendrons, Azaleas, and Myrtles, are its only companions. No typical plants remind the wanderer that he is in a tropical country. This *Dendrobium* seems to be extremely rare.

The fleshy flowers are entirely dark blue, with the exception of the ovary and spur, which are purple. The sepals and petals are ovate, and almost equal in size, the lip obovate and blunt, the column blue. *A. Lohr, Manila.*

PLANTS OF THE VICTORIAN ERA.

VEGETABLES, 1837—1897.

(Concluded from p. 416, vol. xxi.)

CARROTS.—During the sixty years' reign we have seen some admirable additions made to our Carrot stocks. The little and early French Horn, Long Orange, Long Surrey, and Altrincham, are very old varieties. But we grow now not only a better stock of the French Horn, but in the Early Nantes and Early Carentan, both of the blunt-rooted type, we have valuable summer Carrots, that are universally grown; and the intermediate section, of which the finest now is St. Valery and its English selections, have become by far the most popular for main crop or general use. These stouter, tapering, handsome Carrots have largely elbowed out the long ones of earlier years. As to culture, that remains very much the same.

CELERY.

Generally, the culture of Celery remains where it was, for we grow it in trenches,

as of old, and even the practice of blanching with paper bands, to secure extra fine stems for exhibition, is by no means new. In the early years the Violet, new Flat-stemmed White, Manchester Red, White, and a few others, were the best known. The Manchester Red is still favoured in Lancashire, but the others have been displaced. Beyond adding the Turnip-rooted Celeriacs—a valuable product—we have in the incomparable Dwarf White forms, the dwarf reds, such as Standard Bearer and Colonel Clarke's red, as well as the solid whites of various appellations, Celeries so good that they seem as if improvement on them was impossible.

CUCUMBERS.

In 1837 it was common practice to grow Ridge Cucumbers in gardens and fields, whilst of the few good house varieties that existed, Cuthill's Black Spine being one of the best remembered, all culture was in frames or pits, and poor indeed compared with what is to-day seen in houses expressly built for Cucumber growing. This has become a very important industry, as the supply of home-raised fruits under glass put into the market, and exceptionally good fruits, too, is enormous. One market establishment alone has over 100 houses each 160 feet long devoted entirely to Cucumber production. This is to us to-day a common-place fact. It was undreamt of by our fathers sixty years ago. Our Telegraphs, Perfections, Progress, Rochford's, and many other Cucumbers, testify excellence in length, quality, and productiveness, and long will it be ere they are excelled. Before, we grew the plants on big heaps of soil. Now, in houses, we grow them really in as little root-space as possible, and in return they are all the more productive.

LETTUCES.

Beyond materially increasing our varieties, we have little that is new to say about the others. In the thirties there were the Paris White and Green, and also the Bath brown Cos forms. They are of our best still, and these were of Cabbage form; the Malta, Neapolitan, &c., and both are good varieties to-day. There have been numerous additions to the Cabbage type, of which All the Year Round, Leyden's White Dutch, Model, and some others are good; but all the same, varieties have not been quite so plentiful as names.

ONIONS.

Very considerable is the advance made in Onions. The varieties Silverskin, Deptford, James' Keeping, and the underground or Potato variety, are very old. Now we have a score of the Spanish type, flat, round, and oval, the finest of which, Ailsa Craig, Lord Keeper, Sutton's A 1, Cranston's Excelsior, and many others, have, on the exhibition table, obtained high honours; whilst there are in Main Crop, Southport Red, Reading, &c., some capital main-crop varieties; and of softer Onions, Italian and Tripoli, there are many very fine forms. The very precocious "Queen" has proved to be a useful addition to our stocks. Whilst we grow Onions from autumn and spring sowings pretty much as our fathers did, the newer method of raising the plants under glass in mid-winter, and planting out thinly on to rich soil to secure specially fine bulbs, is largely adopted, with remarkable results.

Shallots.—The small, true Shallot is still better than the coarse Large Red or Jersey.

* "Die Muskatnuss:" the Nutmeg, its history, botany, cultivation, trade and value, also its imitations and surrogate. With a treatise on the cultural history of the Banda Isles. By Dr. O. Warburg. With three heliogravures, four lithographic plates, one map, and twelve illustrations in the text. (Leipzig, Engelmann, 1897, 8vo, xii., and 628 pages. Price 20 marks.)

* *Dendrobium celeste*, n. sp., Lohr.—Præcedenti habitus simile, sed coribus fere, 2—3-pla minoribus, omnino pulchre violaceis, germinibus calcaribus purpureis. Sepala et petala subaequalia, ovata, labellum e basi angustata obovatum, obtusum, basi margine inflexum; columna brevis violacea, anthera apice rotundata. Ins. Philip.

PEAS.

As to Peas, which form our chief summer vegetable, we had in 1837 numerous varieties rather hardy and precocious, with but two or three real marrows, yet were these two or three of singular value, as from Knight's Dwarf and Tall Marrows doubtless have come the myriads of marrow or wrinkled Peas, of which we now have apparently hundreds. The most noted of the hard rounds were Early Charlton, Double Blossom Frame, Blue Prussian, Auvergne, Groom's Blue, Woodford Green, Cimeter or Scimeter, and several others. How have these disappeared from commerce, and no wonder, considering how many other varieties have been raised since 1837! Even the once-popular Sangster's No. 1 and its allies, so early and so hardy, are disappearing even from market culture. Then we had British Queen, Champion of England, Paradise Marrow, Hair's Mammoth, but these are giving place to Eclipse, Telegraph, Duke of Albany, &c., or of dwarf forms, William Hurst, Daisy, and many others. Gradually the old hard round Pea is being eliminated from culture, and in gardens, especially wrinkled marrows of great precocity and excellence, as well as dwarfers, are taking their places. So far as flavour generally is concerned, we have gained little, as the old Ne Plus Ultra and Champion of England, so long in cultivation, still remain the best for quality, but in size of pod and in productiveness the progress has been remarkable. Our best Peas to-day—and they are legion—seem to be unsurpassable, but still raisers keep on striving to excel what seems to be so perfect.

POTATOS.

Finally, the Potato comes under notice, and it alone might command columns of matter to render it full justice. Our fathers in 1837 had relatively few varieties to grow, the best known being Early Manly, Early Shaw, Picotee-eyed Scotch or Regent, the true Ashleaf Kidney (still with us), Red-nosed or Lancashire Kidney, and the Walnut-leaf Champion (not the later-known Scotch Champion), Bread-fruit, Jersey Rebel, Lapstone, and Forty Fold. How few of these remain now! But for the incursion of the terrible *Phytophthora infestans* in 1845—memorable year of disaster to the Potato—most of them might have been in commerce to-day. But that disease, succeeded as it was for many years onward, though not always, with such deadly results, almost decimated Potatoes, but aroused growers to the need for other, stronger, and better resisting varieties. These in time came, and for them we have to thank the American raisers very much, as the intercrossing of these varieties with our own best, led to the production ultimately of such strains, that even when the disease does considerable harm to the Potato-plant, yet the production of tubers is, on the whole, enormous. To obtain these comparative disease-resisters, we have had to sacrifice something of the delicious flavour and quality which marked the Regent, Victoria, and others; but higher quality is now returning, and indeed it seems to be the chief requirement in Potatoes to-day. Now, not a year passes without hundreds of varieties of Potatoes are at our disposal. With regard to precocity, we perhaps have gained little, for the old Ashleaf is still one of the earliest; but we have gained immensely in productiveness and in resistance to disease. It is because of the latter fact, no doubt, that growers have to a general extent refrained from utilising the now famous Bordeaux or anti-disease mixture; but it is satisfactory to know that it is a

cheap and potent force for good, if we will but utilise it. The Potato is now probably, next to Wheat, our most important food product, and there is no evidence of decadence. It is far more probable that as the years roll on this admirable esculent will be even more widely grown and more largely consumed.

SEAKALE.

With respect to this useful winter vegetable, we have added in Lily White one variety to the old purple-stemmed form, and yet the latter is still the one generally cultivated; but there has been great advance made in culture, as the old plan of treating the plant as an ordinary perennial is fast dying out, and the better practice of increasing roots every year by means of root-cuttings mostly prevails. By those means a plentiful stock of good, even-sized crowns for forcing or blanching may be had all through the winter.

PARSNIPS

were in '37 represented by the good Hollow Crown; that is still the best variety, although it has undergone since then some careful selection, and a few others have been added to our lists, of which the Student is, perhaps, the best liked.

RADISHES,

too, have greatly advanced, and the very early olive-shaped forms, and especially those pretty ones known as Breakfast Radishes, have very greatly displaced the old, long-rooted ones; whilst we can have nice roots from the earliest varieties fully two weeks sooner than the older varieties furnished. With these, however, nothing new in general culture is found.

SPINACH.

We have in the French varieties of Viroflay, and in Carter's Longstander, far finer Spinaches, and more prolific of leaves, than the old Flanders, long as these latter have been in cultivation.

TOMATOS.

When the Queen came to the throne, this vegetable—fruit, if such it may be termed, was known almost exclusively as the "Love Apple," and, but one variety, the old Corrugated Red, was grown. The culture was usually against warm walls, and somewhat rough, the side shoots being nailed in and not pinched out as now. For many years Tomato culture was stagnant, the great merits of the fruit product not being recognised. Now all is changed, but glasshouses have done most to bring about this change. Varieties have increased by scores, and literally towns of glass-houses are devoted to their culture. In no direction, probably, has there been seen such marvellous development in any one product as the Tomato presents. It is a vegetable that will in gardening or in market industry be more signally identified with the Queen's long reign than any other. Varieties now seem to be in every respect perfect. So, too, is culture, but as to extent, that cannot have been reached. Really, culture and consumption may be regarded as illimitable.

TURNIPS

were in the thirties represented by somewhat coarser stocks of White Dutch and the yellow variety. Now, what with the very early Milan (which will supply nice bulbs from frequent sowings all the summer), the pretty white Snowball, Golden Ball, with its soft yellow flesh, and the Red-top Globe, our stocks are far superior. Still, we can grow them only as Turnips were grown sixty years since.

HARDY TREES AND SHRUBS.

(Concluded from p. 418, vol. xxi.)

OLEARIA HAASII.—A singular member of the extensive Composite family has been added to dwarf-growing evergreen shrubs within the last ten years, and flowering as it does in early summer, with masses of white, strongly-scented flowers, it is a great gain.

A still newer evergreen plant, blooming in June, and having green, persistent leaves, like a small Holly, is the *Osmanthus*, from Japan, which has many variegated and other forms. And that reminds me I omitted to mention *Paulownia imperialis*, that noble-leaved tree, producing in sheltered spots large lilac, Gloxinia-shaped, sweet-scented flowers. It was introduced to our gardens in 1840.

Rhus glabra laciniata, an elegant Fern-leaved Sumach, is also an acquisition of late years; while the *Robinia*, so esteemed on the Continent, has been there greatly improved, and we have now a great many distinct and fine sorts, as *R. Bessoniana*, *Decaisneana*, *sempiflorens*, &c., all of which may be claimed as gains to horticulture during our Queen's long reign.

The Japanese *Rosa rugosa*, when planted upon a bank or the front of a shrubbery, what can surpass these in beauty of foliage, in the graceful elegance of their large single flowers, and lastly their handsome hips, which in Japan, and here also, are made into a much-esteemed conserve.

Nor must we forget the Japan *Skimmia*, with its fragrant foliage and flowers, followed in a few favoured localities with its bright red berries, introduced by Thunberg from Japan in 1840, and since improved by Standish and others. (See article on *Skimmias*, in the *Gardeners' Chronicle*, vol. xxv., 1886, p. 245.)

Nearly, if not all, the shrubby *Spiræas* have been acquired in the Victorian reign, including *Exocorda grandiflora*, *Nobleana*, *Douglasii*, and lately *Bumalda ruberrima*; while from Japan we have the elegant *Spiræa palmata*, and the useful *Astilbes* as herbaceous perennials.

Among hardy shrubs, the Lilac is an acknowledged favourite, and by the introduction of *Syringa Emodi* from the Himalayas in 1845 we now have upwards of a hundred garden varieties, great improvements in size and colour of flower; while that industrious and very successful hybridist, M. Victor Lemoine, has lately introduced some fine double-flowering kinds. Lastly, we have in *Veronicas*, *Traversi*, *Hulkeana*, and *Andersoni*, and in *Viburnum plicatum*, three very distinct and useful sub-shrubs; which must end this long catalogue of useful and ornamental acquisitions during Queen Victoria's reign. *Experience*.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT Highbury, SHEFFIELD.

Highbury, the residence of Mr. Duncan Gilmour, is situated to the north-east of the city of Sheffield; it is high up in the hills—1100 feet above sea-level—near to some extensive moorlands. The Orchids are in first-class condition, quite a pleasure to inspect. The houses, which extend for more than a quarter of a mile, and face due south, are mostly span-roof structures, with a pathway down the centre.

Odontoglossum crispum is represented by some 12,000 plants, in a very unpretentious-looking structure. Included in this number are 6,000 imported plants, commencing to grow vigorously. Some

experts prefer heart-shaped bulbs, as being likely to produce the best varieties, and elongated ones are rejected, but Mr. Gilmour's experience is, that a good variety is as likely to be produced from one shape as another. There was a quantity of plants of *Odontoglossum citrosimum*; amongst them I noticed the pale variety *O. c. roseum*, and another with large

deepest crimson, with lips from pale lemon to the richest orange, and beautifully fringed; there are no fewer than 2000 of these in the place. Amongst the best of them were *C. M. Reineckiana*; its flowers are perfect in shape, with broad petals, and a broad spreading lip, beautifully fringed; the throat golden, streaked with a shade of purple, the colour of

aurea hanging from the roof, and I was told that there were 300 on the place. Of *Miltonia Roezli* there was a very fine batch in flower, then slightly on the wane, the plants having been in flower for nearly a month past. *Cattleya Trianaei* is a species that is largely grown, and Mr. Gilmour pointed out a fine plant of *C. T. Schroderae alba*, which he believes to be the finest form of it in cultivation. There are *Dendrobiums Wardianum* by the hundreds, which grow larger year by year. I passed a vigorous lot of *Odontoglossum grande*, as well as *Oncidium varicosum Rogersii*, and a good collection of varieties of *Dendrobium nobile*, &c. *W. Harrow.*

LUDEMANNIA LEHMANNI.

A stout pendulous, dense raceme of this pretty and rare species is sent by Joseph Broome, Esq., Sunny Hill, Llandudno. The inflorescence bears over fifty flowers, each 2 inches across, and of fleshy texture. The sepals are yellow, tinged with purplish-red; the narrower petals light orange, with a few reddish spots on the basal halves, and the lip orange, with a dark purple base. The flowers are strongly aromatic, and the plant, with its heavy raceme proceeding from the bottom of the basket, must have been a striking object. A fine variety of *Cypripedium caudatum Wallisii*, a very distinct *Cattleya Mossiae*, with an almost wholly orange-coloured lip; and flowers of *Laelia purpurata Brysiana*, *L. p. alba*, and *L. p. Russelliana*, all excellent examples, are also included. *J. A.*

SPIRÆA ARGUTA ×, Zabel.

THE earliest of the flowering trees and shrubs were this year fortunate in having warm and moist weather, but no spring in recent years was more unfavourable to the flowering of those that followed them. Among other plants, the *Spiræas* suffered badly. Frosts by night, and dry cold winds by day, prevented several of the most beautiful varieties, such as *S. Van Houttei* and *S. media*, from opening their flowers. It says much, therefore, for the hardiness of *S. arguta* that it has never been better than during its last flowering season. And when to that great merit is added its undoubted superiority to all other early *Spiræas* in beauty, it is clearly one that deserves to be brought into general notice. It is as yet rare and but little known, being of hybrid and comparatively recent origin. The first mention of it occurs, I believe, in the *Berlin Garten Zeitung* for 1884, p. 494. Its parentage is there given by Zabel as *S. media* × *S. multiflora* f, *multiflora* itself being a cross between *S. crenata* and *S. hypericifolia*. There is, however, an impression that *S. Thunbergi* shares in its origin. It is of very graceful habit, its shoots being thin, wiry, and arching. During April they are completely covered on the upper side with compact clusters of flowers that are of the purest white. The leaves appear after the flowers, and are 1 to 1½ inch long, obovate, usually sparsely toothed, quite smooth, and of a light but vivid green. There are now several dozens of plants at Kew that have been raised by means of layers from a single plant. This plant was one of the first introduced to this country, and it was from it that the branch here illustrated (fig. 1) was cut. *W. J. B.*

FLORISTS' FLOWERS.

LARGE BLUSH SOUVENIR DE LA MAISON CARNATION.

THIS variety of *Carnation*, when grown in a pot, does not afford a good idea of what can be attained by liberal cultivation in a greenhouse border. Mrs. Jeffreys has so cultivated a plant at Burkhams House, Alton. The plant has been in the border for four years, and it is now 4 feet high and 3 feet wide, the foliage of the glaucous colour one likes to see in a *Carnation*. The gardener has cut from this plant fifty large flowers, and there are dozens more still opening upon it. Many persons write me to say that they cannot

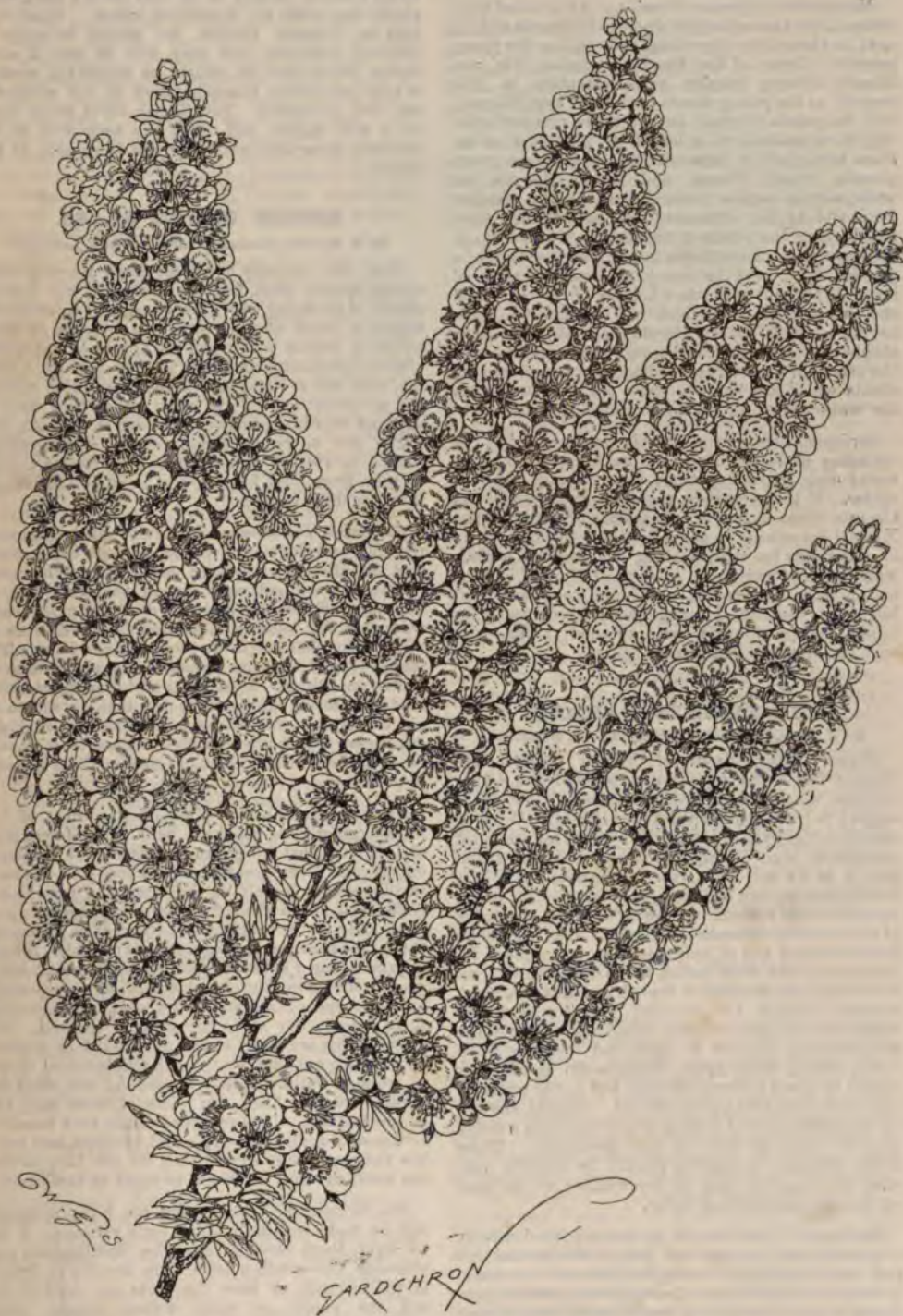


FIG. 1.—SPIRÆA ARGUTA ×: FLOWERS PURE WHITE.

flowers with very marked spotting on the petals. In the same house were a handsome form of *Odontoglossum luteo-purpureum*, and a white form of *Cattleya Mendeli*, with a slightly tinged lip.

At the commencement of June, the plants of *Cattleya Mossiae* filled a house 120 feet in length, all the plants being then in flower, the majority of them for the first time, and it would be difficult to pick out a really poor variety from the lot. There were flowers ranging from white to the

the sepals and petals being very clear. Another beautiful form was *C. M. Wagneri*, a snow-white form, the plant in the best of health, and having five leads. *Cattleya citrina* succeeds here, and Mr. Gilmour remarked that it is liable to be injured by excessive watering.

Of *Laelia grandis tenebrosa* there is a very promising lot, some of the specimens filling 18-inch pans. *L. tenebrosa magnifica* was carrying six sheaths. In passing I noticed numbers of plants of *Cattleya*

grow Malmaison Carnations, and wish to know the reason. I have in my mind's eye one particular case, but as I was sure it was owing to lack of care or knowledge on the part of the cultivator, it will be enough for me to state how I found the plants on inspection. They were standing out-of-doors at mid-summer, on a gravel path in front of a vinery, in the full sun, and to all appearance the soil was dry as dust; moreover, the flower-pots were not nearly large enough. I presume this exposure was intended to "harden off" the plants, and such kind of treatment would do that with a vengeance. Another gardener could not succeed, and his treatment was the very opposite to that of the other; he had planted them out in a shady part of the garden in rich, deep soil, with the result that "spot" had set in virulently. As a fact, no one can succeed in growing Malmaison Carnations who does not attend to their needs at the right time, and treat them throughout the year as greenhouse-plants. They may be placed out-of-doors for part of the time in some districts, but not in those that are cold and wet. I have placed them out-of-doors when the flowering-period is over, i.e., about the end of June, until the middle or end of September, but not in a very exposed position. I have thought the plants benefited by this treatment—but, upon the whole, I think, it is safer to have them in a light, airy greenhouse all the year round; and even when they are not in flower, a light shade is beneficial in the hottest part of the day if bright—but full ventilation is necessary.

I have houses of two sizes for my Carnations, but both are span-roofed. The better house is that which is 18 feet wide, and has a stage in the middle and one at the sides; but I must say the plants do equally well in the low house, which has a path running down the middle, and only side stages—the plants are thus brought near to the roof, the flowers almost touching it. I have not as yet tried planting out, but Mrs. Jeffreys' success at Alton almost tempts me to do this. The cultivation of the plant in a pot has the advantage of convenience. In hot summer, red-spider causes much injury to the leaves, and aphids only a little less. All the varieties require plenty of rooting-space, a good, strong, one-year old plant needing an 8-inch pot; and it is necessary to pot firmly, and have well-drained pots, and to use a compost consisting of good fibrous loam three quarters, peat one-quarter, and one-quarter decayed manure. An 8-inch pot is, in garden parlance, a 24; but they are usually only 7½ inches in diameter at about 1 inch below the rim, and amateurs often make mistakes in the sizes of pots. A well-known amateur was instructed through his gardening paper to use so much artificial manure to surface-dress a plant in a 12-inch pot. He measured round the outside of the rim, and used it on a 48-size, and so killed his plants. Another detail of culture is, that the plants do not like an arid atmosphere, therefore it should be avoided by sprinkling the paths and the stages about mid-day in hot weather. Propagation is effected either by cuttings or layering. The cuttings or slips may be put on a frame with a slight bottom-heat at any season of the year, and kept close till roots form. Layering is done in July, and the layers are taken off and potted up early in the month of September. Besides the usual bluish and pink varieties of Souvenir de la Malmaison, those raised by Mr. Martin R. Smith, of Hayes from seed, are quite a revelation in regard to colour and form. There are amongst them the pure white Nell Gwynne; Lady Grimston, pinkish-white, marked with bright rose; Prime Minister, scarlet; Tumpeter, bright crimson; Sir Evelyn Wood, salmon-pink, striped bright red; Mrs. Everard Hambro, carmine-rose; Sir Charles Freemantle, deep rosy-pink; Princess May, rich deep rose; The Churchwarden, bright crimson scarlet. J. D.

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Autumn-bearing Raspberries.—Pull up, or cut down with a Dutch-hoe all suckers which spring up from the old stools of autumn-bearing Raspberries as soon

as the former appear, with the object of throwing all the strength of the parent plants into the development of the canes selected last March, and trained about 6 inches apart to strings twisted once round a series of sticks stuck into the rows at short intervals. These canes will produce fruit during the months of August, September, and October—in fact, until cut down by frost. A surface-dressing of short manure laid on between the rows is beneficial, tending, as it does, to increase the weight of the crop.

Management of Summer Growths.—All kinds of fruit-trees call for extra attention during this month and the next in the matter of pinching and training the young growths. Trees of the Peach, Nectarine, Fig, and Morello Cherry require extra attention in this respect, as the young shoots have to be kept thinned-out, the points pinched out of those retained after they have attained to a length of 18 inches or so, these being laid in between the shoots of last year's growth. Pears, Plums, and Sweet Cherries (on walls) require similar treatment, as do also espalier Pears and Apples. Standard and bush-formed trees should have the points of the shoots pinched if unusually strong. Superfluous lateral growths should be pinched hard back to one joint from the point of issue. This will promote a balance of growth. Red and white Currants, which are trained on walls having a north aspect, should have the fore-right shoots shortened, and the upright ones trained over the available space in the ordinary manner; topping shoots which are likely to draw the sap away from the weaker ones, for the reason mentioned above.

Syringing Wall-trees.—Much good is done by syringing stone fruit-trees on walls about 5 p.m. on sunny days, by freeing them from aphides and red-spider. If these pests be abundant, tobacco-water at the rate of one quart to four gallons of water, or the XL All Insecticide at the rate of one to thirty parts of water may be used, washing the trees with clear water the next morning. All trees of Plums, Cherries, and bushes of Currants, should be kept free from blight by the use of insecticides; clear water or liquid-manure (diluted) being afforded at the roots with the intent to increase of vigour.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

French Beans.—Seeds of French (Dwarf) and Runner Beans may be sown, to succeed the earlier sowings when these become exhausted, or it is desired to leave seeds of them for maturing. Without selection, rigidly and constantly carried on amongst vegetables, high quality cannot be maintained, and this is, as we well know, carefully carried out by our leading nurserymen and seed-growers, although not to the extent that it might be; the result being, that some of our once-famous stocks of different kinds of vegetables have dwindled out of cultivation to make place for others not one whit better, these being simply re-selections. In the case of French and Runner Beans, selection should be practised year by year, the straightest and longest pods being reserved from the early sowings, allowed to ripen, and carefully dried before storing them away. Beans sown at this date should be given a warm, yet open and sunny position, and a rich, well-tilled piece of land. Should the soil be dry at the time of sowing, afford the drills a heavy dose of water an hour or two previously. Those Beans that are in bearing should be liberally supplied with manure-water in dry weather, or the land top-dressed and afforded water.

Beetroot.—If the Beetroot crops have failed, wholly or partially and the seed laid long in the ground this year before starting, a sowing should at once be made of Pragwell's Exhibition, a quick-growing variety, producing roots of a useful size even when the seed is sown so late as July. Although a Beetroot plant may be readily transplanted, the practice cannot be recommended except filling up gaps in the rows; the roots rarely attaining to a useful size, or having a good shape. Turnip-rooted or Egyptian Beet comes in very quickly, and where early sown it is fit now for salads. It is the best variety for sowing on shallow soils.

Planting Green Vegetables.—Push on with the planting of the Brassicas; especially Brussels Sprouts which should be got out in good time. A good breadth of spring sown Cabbage, if planted at this season, comes into use before the early Savoy's are fit for table. Continue to plant late-sown Cauliflowers, the Savoy's, Broccoli's, Kales, &c., as space can be found for them, taking care when planting them on recently-dug ground to trample or otherwise make it firm. This

applies especially to Broccoli, for which the land cannot well be made too firm and hard. Afford water to all green crops till well established, then ply the hoe frequently between the plants. If seeds of Coleworts have not yet been sown, sow them forthwith on an open piece of ground, which, if poor, should be first well soaked with liquid-manure. As soon as the plants are large enough, transplant them on to well-prepared land at 1 foot apart. These are most useful greens, that should be extensively planted, coming in as they do at a time when green vegetables are sometimes scarce. Small sowings of Lettuce, Endive, &c., should be made at frequent intervals, but they will be best if sown thinly where they can remain, as unless the weather is very favourable, transplantation in hot weather is not very successful. Sow Radish seeds every week on a cool border, and water the beds well in dry weather, doing this while the sun is shining on the plants.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Figs.—In the early house the trees carrying their second crop of fruit, now swelling fast, will require plenty of syringing with clear water, and an abundant supply of water at the roots. Any neglect of these points of culture will make the spread of red-spider almost a certainty, and then, if these foes get a footing, they will soon begin to attack the fruits, causing the so-called "rust." By using the syringe twice a day, and affording plenty of moisture at the root, red-spider will be rendered innocuous. Weak growths should be rubbed off, and those that remain tied-in as they grow, just keeping the points of the shoots from touching the glass.

Succession Fig-houses.—The fruits on the trees are ripening, and the plants should be kept dryer at the root, till all of the fruits are gathered, not, however, letting the soil get very dry, or the fruit will be small and not finish as it should do. Afford air freely whenever the weather is favourable, a little even at night being left on if the fruits exude juice. The second crop of fruits on these trees should be thinned to two on a shoot. Later trees will require attention in the matter of tying, taking care that the shoots do not become so crowded as to exclude the sunlight. All second-crop fruits showing on these trees should be rubbed off, it being now too late for these to come to perfection.

Cherries and Plums.—Most of the fruits of the former under glass will have been gathered ere this, and all trees that are grown in pots should be placed outside, and planted-out trees kept very cool. Remove surplus shoots, loosely tie the remaining ones to the trellis, and afford the trees a heavy syringing twice a week and plenty of moisture at the root, so as to keep the leaves fresh for as long a time as possible. Plums require a longer season to mature their fruits, and a good deal of care should be taken of them, especially not to let them lack water at the roots, but examining them twice a day as to the state of the soil. The growths that are likely to run away must be checked by pinching out the points, and the terminal shoots of trees on trellises should be tied in; and when the allotted space is filled, the points of these may also be pinched out. If slugs give trouble, tie a bunch of cotton-wool round the stems and uprights, and put a few Cabbage leaves about; they do not like crossing the wool, and may be caught at night on the leaves.

The Strawberry.—Preparation for layering should now be made, especially of the early varieties. I like to layer them straight into the fruiting-pots; as although this entails a little more trouble at first, it is well repaid, as once the roots get hold of the soil the plants go away without check, while another advantage of this method is that they do not require nearly so much attention in the matter of affording water—a point of consideration in the busy season. The only drawback is, that in a wet season the soil is likely to become soured before the roots get properly into it, but this does not often happen. See that the pots and crocks are clean, and that the potting compost is got in readiness and placed under cover. Choose for this purpose three-quarters friable loam, roughly broken, one-quarter lime-rubble, and about a 4½-inch potful of soot to every barrow-load, a little fresh finely broken-up Mushroom-dung being an assistance if the loam be not rich. I like to do without this last, if possible, as it is apt to decay, and get washed out of the soil by the water and rain, leaving the soil too porous. Fasten the runners on with pegs of Birch or bracken, in preference to stones, &c.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoe Park, Luton.

Carnation Souvenir de la Malmaison.—Layering may now commence, bringing the operation to a close quickly in order that the layers, when rooted, may have time to become well established in pots before winter. I prefer to do the layering in frames which have been in use for forcing Potatoes, Carrots, &c., these containing a good body of soil into which the plants can be turned out of the pots, the layering being carried on as the work proceeds. In layering this variety, the upward cut should not be made long, say about 1 inch, and the incision should be kept open when pegging the layer down in the soil. An inch deep of the latter above the layered joint is enough, the mould to be used in covering it being passed through a sieve with an $\frac{1}{4}$ -inch mesh. At the end of the job, afford the plants, layers, and all a good watering and close the lights. The layered plants are the better for a slight amount of shading for a week or two, but on no account should the frame be kept close or stuffy, and only healthy shoots should be layered.

Work in General.—The various plants which are intended to flower during the winter should receive close attention, not being allowed to suffer lack of water at the roots; those which have filled the soil with roots being plunged in coal-ashes. Let staking and tying be done betimes, or shoots may be broken off and many a nice plant disfigured; and carry on a constant war with the insects which infest the plants, making an effort to clear them of the pests before they have increased in numbers greatly. Those *Bouvardias* which were treated as previously advised, and are now growing strongly, may be stopped in so far as regards the stronger shoots, and some thinning-out may be called for, as well as additional space afforded the plants. *Primulas* will require their final potting, afterwards to be plunged up to the rims of the pots in cocoa-nut-fibre refuse in a cold frame, with their leaves near the glass, and shaded from strong sunshine. The plants of *Eucharis* of various species should be cleaned with an insecticide and water, in case mealy-bug should be present, and the pots containing them, it sometimes happening that mealy-bugs are found under the rims of the pots. Let the plants of *Eucharis* be placed in such a position that each is easily reached with a syringe which should be now used twice a day. Sow in boxes seeds of *Campanula pyramidalis*, *C. p. alba*, and *C. Medium* (Canterbury Bells); the seedlings will flower next year. *Cockscombs* and *Celosias* are liable to be infested with red-spider, and if syringing them with rain-water does not clear the plants of these pests, lay the pots on their sides, and employ a mixture of "fir-tree oil" in water. Let these plants be repotted before the roots get pot-bound. Young plants of *Euphorbia coccinea* and *E. pulcherrima* should now be in active growth, and checks of all kinds should be avoided, such as that brought about by abrupt changes in the temperature which causes the plants to lose their lower leaves; and do not crowd them together. *Zonal Pelargoniums* standing in pans, and intended for winter blooming, should be stood at a sufficiently wide distance apart that the air can circulate freely amongst them. Cut off the blossoms early, and afford the plants clear soot-water once a week.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Barford, Dorking.

Cypripediums.—Besides those plants mentioned in my Calendar of last week, there are some others which have finished flowering for the season, viz., *Cypripedium Stonei*, *C. Lawrenceanum*, *C. barbatum*, *C. Swainianum* ×, *C. Rothschildianum*, *C. Curtisii*, *C. Eurayle* ×, *C. Lebaudyum* ×, *C. Hookeri*, *C. ciliolare*, *C. selligerum majus* ×, *C. Eleanor* ×, *C. superciliale* ×, *C. grande* ×, *C. Sedeni*, *C. leucorhodium* ×, *C. macrochilum* ×, *C. Druryi*, *C. Dryanum*, *C. Schroderae*, &c., which, beginning to grow soon after flowering, it is prudent to examine in order to ascertain if additional rooting space be needed. If vigorous specimens are desired, the plants should not remain in a pot-bound condition. When re-potting, care must be taken not to injure the points of the young roots, as many of these are in active growth. The plants should be afforded just as much space as will allow for them to make two seasons' growth. The pots should contain clean crocks for one third of their depth, and as a compost some fibry peat, sphagnum-moss, and crocks, mixed well together. This should be put firmly about the roots, but not so that water cannot rapidly pass away. Place the re-potted plants

on the shady-side of the East India-house, and for a few weeks afterwards let the compost be kept merely moist, although re-established plants will require abundance of water. *Cypripediums* of all kinds should be examined occasionally for the mischievous yellow thrips which secrete themselves in the axils of the leaves. It helps to keep these insects in check, and is beneficial to the plants if a slight dewing overhead with a fine syringe be afforded at closing-time on warm days. It is not good practice to syringe such plants as *C. Stonei*, *C. Rothschildianum*, *C. javigatum*, *C. philippinense*, *C. Parishii*, *C. Sanderianum*, *C. exul*, *C. prestans*, *C. Lowi*, *C. Haynaldianum*, *C. Lebaudyum* ×, and *C. Sanderoselligerum* ×, the water remaining low down in the centre of the growths, and in the axils of the leaves, and causing decay.

Dendrochilum.—By this time *Dendrochilum* (*Platyclinis*) glumaceum will have made up its growth, and should be removed from the warm-house, and placed where the temperature is intermediate, affording the plants but little water at the root till growth has begun. The thin leaves of this plant should be frequently cleaned with a sponge and soapy water, in order to rid them of red-spider.

Temperatures.—With such warm weather as has prevailed during the past week, scarcely any fire-heat will be needed. In the East India-house the hot water-pipes should by night be made only just luke-warm; and artificial heat in the Cattleya-house will not be needed at night if the inside temperature keeps at 60°. Should, however, the external air be damp and chilly, it will be advisable to make the water-pipes luke-warm, otherwise the young growths of some species of *Cattleya* or *Laelia* may decay. A chink of air should be left on the top and bottom ventilators on warm nights. The *Odontoglossum*-house must be freely ventilated at all times, and the atmosphere kept well charged with moisture, except for a few hours during the middle of the day. Keep the plants well shaded so long as the sun shines upon the roof, and afford water only to those that are dry. On span-roofed houses, fully exposed to the sun all day, we find it beneficial to supplement the lattice-wood blinds with ordinary garden mats, placing these upon the glass so that a current of air passes between them and the blinds; by this means the inside temperature is kept 6° or 7° lower than that outside. When the sun is powerful, it is an advantage to syringe the mats several times during the day. In my experience, the *Odontoglossums* when exposed to the sunlight admitted through the lattice-wood blinds become red in the leaf, and the foliage does not last nearly so long as if it maintained a fresh green appearance. If these red-tinted leaves do not always fall off during the summer months, they do so as soon as fire-heat becomes a necessity.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dromore, Maidenhead.

Spring Bedding-plants.—The preparation of spring bedding-plants for next season should be carried on from the present time as opportunity offers. Cuttings of the under-mentioned plants will strike readily, if inserted in moderately light soil, surfaced with a little sand, and covered with a frame or hand-light. If these can be placed on the north side of a wall or high fence, less shading will be required, and in the cooler position roots will form very readily in the event of the weather being hot and dry. *Pansies* and *Violas* of all kinds may be struck now for replanting the beds in the autumn. *Cerastiums*, *Alyssum saxatile*, *Arabis* in variety, *Aubrietias*, and varieties of the double-flowered *Wallflower* may be struck where propagation by cuttings is carried out. Double *Daisies* and *Myosotis*, that were laid in temporarily previously to bedding out, should now be lifted and pulled into small pieces, each with its bit of root, which, if planted firmly in rather light soil, in a shaded or partially shaded position, such as a west or north border affords, they will make good plants by autumn, without the aid of frames or transplanting. During dry weather they will require to be frequently watered, until partially established. Several useful spring bedding-plants may also be easily raised from seeds to be sown forthwith, namely, *Myosotis dissitiflora*, *M. d. alba*, *M. alpestris*, and *M. alpestris Victoriae*, *Silene pendula*, and *S. p. alba*. *Candytufts*, and *Saponaria calabrica*, pink and white, should be sown a little later. *Nemophila insignis* is a useful spring-flowering plant, and if seed be sown towards the end of August, either broadcast,

or thinly in drills, strong plants for putting into the beds in October are obtained.

Bulbs.—Tulip and other bulbs removed from the flower-beds and laid in temporarily to ripen off should be lifted and placed on shelves in some open shed until dry, to be cleaned and stored as soon as an opportunity occurs. Where borders are devoted to *Daffodils*, and the bulbs require lifting and re-planting, this should be done as soon as the tops have quite died down, which is the case already with some varieties. For general garden culture it is not necessary to lift these bulbs annually, about every three or four years being sufficiently often, unless it is desired to increase the stock. The bulbs after lifting should be laid out thinly in a cool store to dry, and be afterwards looked over, and the largest and best selected for replanting, which should be done during this month. The smaller bulbs should be planted together in another part of the garden, or put out thinly on the margins of the shrubberies, and in semi-wild positions.

Humea elegans is frequently used in flower-garden arrangements, where as a central plant to a small bed, or placed at intervals over a larger one, in conjunction with a carpeting of other bedders, it is very effective, and continues to be so for most of the season. To raise plants for using in the beds next year, seeds should now be sown. Some care is required in sowing the seeds, and they should be very lightly covered with fine soil. Sow in a pan of light soil, and place in a cold frame, and keep shaded until the seedlings appear.

Roses.—We are now in the middle of the Rose season, and notwithstanding much green-fly, and the ravages of the maggot, the supply of good flowers promises to be quite equal, if not better than in the last two years. Standard *Briars* for budding should be looked over occasionally, and any surplus shoots removed, leaving two of the strongest and best placed for budding.

THE APIARY.

By EXPERT.

"Artificial" Increase, or Dividing Colonies.—A mania seems to have seized many of those keeping bees for increase of colonies otherwise than by natural swarming, if my correspondence is any criterion to go by, for at no time in my bee-keeping-life have I had so many inquiries in regard to this matter as during the past three months; therefore, to save so much private correspondence, I will give some of the plans which I use successfully, even though it is to quite a large extent matter which I have given before. But before doing so, I wish to say that for this locality (Berks) I prefer natural swarming to any plan of artificial increase when only one swarm is allowed from each old colony, and where the said swarm will issue in time to prepare both old and new colonies in good condition for the honey harvest. The first plan I will give for artificial increase is what is termed by some as the "nucleus plan." To be of the most value the nucleus should be "forced" eighteen or twenty days before the honey-harvest by having enough bees in it to protect a frame two-thirds full of brood, the larger part of which should hatch during the first four or five days, while the said comb should if possible contain some eggs, just laid. Besides this frame of brood and bees, the nucleus should contain a frame having a pound or two of honey in it, the whole being set in a hive and confined to one side of the same by means of a division board. The next day after making, a nearly-mature queen cell should be given, or a newly-hatched queen introduced. In about ten days, if all proves favourable, the young queen will be laying, when I go to the hive from which I formed the nucleus, and select a frame of brood, nearly all of which are gnawing out of the cells, and add this to the nucleus, always putting a frame of comb or comb-foundation into the old colony, to take the place of the one taken out, otherwise too much drone comb will be built, for colonies that are allowed to build comb under these conditions nearly always build drone comb. I now wait four or five days, when I go to the old colony and take out four frames of brood, from which all the bees were shaken as they were from the last-named frame, and carry them to the nucleus. I now fill each hive with empty comb or comb-foundation, and put on the surplus arrangement. By the above method, each colony is made of about equal strength, and the brood is so taken out of the hive, that the colony has no desire to swarm. The old colony will have the most field bees for the first week or so, but the other will soon make the stronger colony of the two.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Liters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR JULY.

SATURDAY, JULY 3	Société Française d'Horticulture, London. Isle of Wight Horticultural Association. National Amateur Gardeners' Association: Exhibition in the Royal Botanic Gardens.
WEDNESDAY, JULY 7	Horticultural and Rose Shows at Glasgow, Leeds, Hitchin, Tunbridge Wells, and Reigate. County Borough of Hanley Horticultural Fête (2 days).
THURSDAY, JULY 8	Durham, Northumberland, and Newcastle Botanical and Horticultural Society's Exhibition (3 days). Rose and Horticultural Shows at Bath, Harrow, Woodbridge, Gloucester, and Farnham.
SATURDAY, JULY 10	Rose Show in the Botanic Gardens, Manchester. Royal Botanic Society, Meeting.
TUESDAY, JULY 13	Wolverhampton Horticultural Show and Fête (4 days). Royal Horticultural Society's Committee.
THURSDAY, JULY 15	National Rose Society's Show at Norwich. Helenburgh Horticultural and Rose Show.
SATURDAY, JULY 17	New Brighton Horticultural and Rose Show.
WEDNESDAY, JULY 21	Beckenham Horticultural Show.
THURSDAY, JULY 22	Trentham and Hanford Horticultural Society's Show. Falterhebble and District (Halifax) Rose Show.
TUESDAY, JULY 27	Royal Horticultural Society's Committee. Tibshelf Horticultural and Rose Show.
WEDNESDAY, JULY 28	Chester Horticultural Fête (2 days). Carnation and Picotee Society's Show at Edgbaston Gardens, Birmingham.
SATURDAY, JULY 31	Liverpool Horticultural Association's Show (2 days). Royal Horticultural Society of Southampton Show.

SALES FOR THE ENSUING WEEK.

TUESDAY, JULY 6	Imported and Established Orchids at Protheroe & Morris' Rooms.
FRIDAY, JULY 9	Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chislewick.—63° 2°.

ACTUAL TEMPERATURES:—

LONDON.—June 30: Max., 76°; Min., 60°.

PROVINCES.—June 31 (6 P.M.): Max., 70°, at York; Min., 54°, Aberdeen.

The Manuring of Orchids.

Two subjects frequently trouble the mind of the Orchid cultivator. One, the fact that certain Orchids, after a deceitful period of apparent vigour, gradually die off, and the other is the enquiry whether or not manure is requisite in Orchid culture. The two subjects are evidently co-related. Orchids may be "air-plants," requiring such food as may be derived from water and air in combination with light, but they would be quite unlike all other green-leaved plants if they did not require something more than this in the shape of nutritive matter derived from the soil. What part bacteria or

similar organisms play in Orchid life has not, so far as we know, been determined, but in all probability some of these have, as in other plants, the power of rendering the nitrogenous compounds in the soil available for nutritive purposes. Be this as it may, there is a distinct need for further information on the mode of existence and the life requirements of Orchids. This has led to some experiments on Cattleyas, the results of which are given in the *Comptes Rendus* for June 8. With a view to determine the cause of the gradual degeneration that takes place in some Cattleyas, MM. ALEX. HÉBERT and G. TRUFFAUT hit upon the expedient of analysing Cattleyas at the time of importation, and after some years when degeneration had set in. They took note also of the fact that the production of flowers is an exhaustive process, and that little is done to compensate for the loss.

The result of these experiments shows that Cattleyas when degenerate contain less dry matter, organic substances, nitrates, and ash. Amongst these elements, diminution is evident in the amount of potash, lime, magnesia, and phosphoric acid—that is to say, in the principal fertilising elements. The Cattleyas were grown in a soil almost destitute of fertilising matter, and their weakness is attributable to the production of the flowers for which they were cultivated. To verify this the experimenters proceeded to analyse the flowers, and discovered what amount of loss of fertilising elements these plants sustained as a consequence of flowering. It may be said that the organic matter of the flowers contains a considerable quantity of nitrogen, and that the ashes are particularly rich in potash, lime, magnesia, and phosphoric acid; the dwindling of Cattleyas in respect of these elements is therefore explained very clearly in this way, the results plainly showing that degeneration of these plants is attributable to the exhaustion caused by the production of flowers.

From the standpoint of practical horticulture we may conclude from this investigation that Cattleyas should receive, to counteract this degeneration, a mixture of suitable manures, containing nitrogen, phosphoric acid, potash, lime, and magnesia.

Mr. SMEE has also treated the same subject in a letter addressed to the Chairman of the Orchid Committee, which will appear in our next issue.

THE DECORATIONS AT BUCKINGHAM PALACE.

—Favoured with an invitation to witness the various decorations in the gardens at Buckingham Palace on the occasion of the garden party given by the QUEEN on Monday, June 28, we were enabled to view the various methods employed by Mr. OWEN THOMAS, the Head Gardener at Windsor Castle, in decorating the QUEEN's reception tent, the Princess of WALES' tent, and the several buffets erected under canvas whence refreshments were dispensed to the guests, numbering, we were informed, about 5,000. On the terrace was a long apartment, constructed of canvas, of appropriate colour, white and red, in stripes, and this on the side facing the buffet was decorated with a grand plant of *Areca Bausei*, 12 feet in height, surrounded at the foot with *Hydrangeas*, *Caladiums*, and other plants. Standing against the wall of the Palace were ten plants of *Cocos* in pairs, each about 15 feet high, surrounded with smaller masking groups of *Caladiums*, &c. This apartment, with its decoration lit up by electricity would have a good effect. An ante-room, also improvised for the occasion, was close by, and had an ottoman, the middle portion of which held a big bed of an Ivy-leaved *Pelargonium*—*Souvenir de Harry Turner*—that afforded a nice

effect, with its bright rosy-red flowers, and a fine plant of *Dracæna Lindenii* in the middle of the arrangement. The corners and the doorways in this apartment were flanked and filled, as the case called for, with tall Palms and flowering plants. The QUEEN's permanent tent, which is placed on the green sward on the west side of the Palace, was enlivened by outside groups standing to the right and left of the entrance. We noticed in these groups *Rhodanthe Manglesii*, and yellow *Marguerites* in broad bands, then came *Hydrangeas* white and pink; *Lilies*, and some Palms towards the back part. The Maple planted by the QUEEN on that day stands at about 50 yards from this tent. The Princess of WALES' tent was a circular one, ornamented with a round group in the middle, in which *Pelargoniums*, *Hydrangeas paniculata* and others, *Crotons*, *Kalosanthes coccinea*, and Ferns played the chief rôle. Plants of *Clerodendron Balfouriana* in flower, trained fanwise, were placed at the sides, with choice flowering subjects arranged in front of them. The QUEEN's marquee was of great size, and erected with closed ends and side, one side being left open. It was approached by a step or two stretching along the entire length of the open side, and contained groups of plants in the corners, each being backed by plants of *Clerodendron Balfouriana* in flower. The groups consisted of *Dracenas* with beautiful coloured leaves, *Crotons*, *Kalosanthes*, *Hydrangeas*, *Cannas*, *Lilium speciosum*, *Pelargoniums*, and *Hoteia*, which gave very rich colour effects. From the roof hung pendants of Roses arranged as globes, supported by festoons of Roses. The central group stood against the side of the marquee, and was, if anything, richer than the other in colour of flower and leaf, and in variety of the fine plants employed. We remarked *Richardia Pentlandii*, its rich yellow spathe contrasting with reds and scarlets of *Pelargoniums*, *Cannas*, *Rhodanthe*, the white *Antirrhinum*, The *Bride Gladiolus*, and *Hydrangea paniculata*. *Coleus* and *Roses* were used with good effect, the latter very profusely as pot plants, to form the encircling border. A bouquet of choicest Orchid blooms stood on each of the four tables. The entrance to this splendid marquee was suitably flanked with large groups of plants, including, among numerous species and varieties of foliage plants, some grand examples of *Cycads* and Palms. Four rows of *Roses* in beautiful flower encircled each of these groups.

LINNEAN SOCIETY.—The next session of the society will commence on Thursday, November 4, at 8 P.M. A report of the meeting held on Thursday, June 17, will be found on p. 11.

THE POST OF HEAD GARDENER AT WELBECK ABBEY.—The Duke of PORTLAND has appointed Mr. J. ROBERTS, formerly gardener to the late Baron LIONEL DE ROTHSCHILD, Gunnersbury Park, as head gardener at Welbeck Abbey in place of Mr. HORTON, who is retiring. Mr. ROBERTS kept the fruit and other departments at Gunnersbury in such condition that it is doubtful if the charge of Welbeck could have been confided to a more able man.

THE NEWCASTLE SUMMER FLOWER SHOW, which will take place on the 8th, 9th, and 10th inst., is to be held in the Recreation Ground. Valuable prizes are offered for *Roses* (including a special Victorian prize), and for table decorations, &c.

ISLE OF WIGHT.—A number of the members of the East Cowes Horticultural Society visited by invitation, on June 23, the rosary belonging to Mr. LEE-WHITE, president of the society. Mr. WHITE grows upwards of 600 plants, and this year, for the second time in succession, he has won the challenge cup offered by the Island Rose Society. Mr. S. HEATON, horticultural instructor, afterwards gave a lecture on the cultivation of the Tomato.

LIST OF SEEDS FOR EXCHANGE.—From the Botanic Gardens, Sydney, Mr. J. H. MAIDEN, the Director, issues a list of seeds available for exchange. It is the first catalogue of the sort sent out from these gardens, and includes, not only seeds therein ripened, but those of indigenous species collected from uncultivated plants. The Director hopes that a larger list will be forthcoming in future seasons.



FIG. 2.—THE ROYAL ORCHID BOUQUET, DELIVERED TO THE QUEEN AT BUCKINGHAM PALACE, ON JUBILEE DAY.
(The flowers were supplied by Messrs. Sander & Co., and the bouquet was arranged by Messrs. Wills & Segar. See p. 420, in our last issue.)

"HOOKER'S ICONES PLANTARUM."—The second part of the 6th vol. (May, 1897), has lately been issued. It is devoted mainly to plants of botanical interest selected from the Kew herbarium. Of *Bulbine mesembryanthemoides* (tab. 2528), a Liliaceous plant from South Africa. It is stated that the "two swollen leaves lie almost underground, and at the flowering stage have almost always lost by desiccation such part as protrudes into the hot pulsating karoo atmosphere. The underground part is alive and green, the ragged brown projecting tips are quite dead." *Pentzia virgata*, a South African Composite, is a valuable fodder plant in dry hot countries. *Euphorbia grandicornis* is a tall growing shrub, with thickened vertically ribbed and transversely constricted branches beset with long stout spines. Kew.

ROYAL PURVEYORS OF SEEDS.—We are informed that Messrs. DICKSON & ROBINSON of Manchester, seed merchants to H.M. The QUEEN, have just had the additional honour conferred upon them of being appointed seed merchants to H.R.H. The PRINCE OF WALES.

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual outing of this society will take place on Monday, July 19, 1897. The programme includes a railway journey to Henley, which is reached at 10.55, then embarkation on launches at the Royal Hotel Landing Stage, and a journey made on the river to Greenlands; then dinner, followed by a trip down the river; tea, and return from Henley to London at 9.40. The train leaves Paddington at 9.32. Further particulars can be obtained from Mr. R. DEAN, Ranelagh Road, Ealing.

HAILSTORMS IN THE HOME COUNTIES.—We hear of considerable injury being caused by hail in Essex, Herts, and Bedfordshire, to farm and garden crops. Some of the extensive market growers in those counties have suffered severely, roofs of glass-houses and dwelling-houses having been penetrated by the hailstones, which were of considerable size. Our correspondent, Mr. MAYCOCK, of Luton Hoo Gardens, one of the places visited by the storm, and whose glasshouse resisted the hail, brought specimens of plants and young wall-fruits, Pears, &c., ruined by hailstone. His Chrysanthemums, which had made their first "break," have every point broken off, and nearly every leaf stripped from the stems. He possessed 1200 fine plants, not one of which is likely to be of any service as a decorative or show plant this year. Pea and Potato haulm, Lettuce, Strawberry foliage, young Broccoli, &c., have all been so defoliated and bruised as to be quite spoiled. Although these storms do not usually extend over very large areas, we fear that the loss in gardens in the districts visited will be very great. (See also p. 9 in the present issue.)

MESSRS. JOHN SHARPE & SON'S EMPLOYÉS OUTING.—The employés of Messrs. SHARPE & SON, of Bardney, were, at the invitation of Mr. W. H. SHARPE, invited to spend Monday, June 28, at Sutton-on-Sea, and a very pleasant day was spent by the party.

ANOTHER TOMATO DISEASE.—Some of our correspondents in Scotland, whose initials only we give, write:—"We have taken the liberty of sending you by post to-day a box containing four and a half Tomatoes which were pulled on the evening of Friday, the 18th ult., from a lot which seemed to be all going in the same way. The plants are fully 6 feet high, and are showing plenty of fruit ripe and unripe. So far as we can see, there is no appearance of disease or decay in the stems or on the leaves, and they are grown in wooden boxes with the best of soil. The two large fruits, when pulled last night, were showing a slight discoloration; this morning the discoloured parts have given way, as you will see. The half fruit, when pulled, was, to all appearance, perfectly sound, but in the centre you will observe a sort of core, with a growth. The two small fruits were pulled at the same time from other plants. The plants have been

grown in a very high temperature, but with no side ventilation, and Tomato-plants have been grown for years in the same house and under the same conditions without any sort of disease having shown itself, and we shall feel greatly obliged if you can give us any idea of the cause of this, and the cure. The fact that the plants are in perfect health to all appearance, has puzzled us, and we hope that you, from your great experience, will be able to solve the mystery. They were grown at a high elevation, and in Scotland we have had a cold and sunless spring. A. C." Our authority on fungus diseases of plants writes as follows, after an examination of the fruits, &c.:—"The disease is caused by Bacteria, and is very contagious, consequently fruits showing the least sign of disease should be gathered and burned. The disease is more general on the Continent than in this country. No cure is possible when the fruit is once attacked."

THE LATE DR. R. HOGG.—At a representative meeting of horticulturists held at the Horticultural Club on the 15th ult., it was resolved that a subscription should be entered into for the purpose of defraying the cost of a die for a medal to be presented to the Royal Horticultural Society, and from which medals could be struck and given for fruit under certain conditions, somewhat in the same way as the Banksian Medal. Mr. HARRISON WEIR kindly undertook to make a design for the obverse of the medal, the other side being a portrait of Dr. Hogg. A circular will be issued shortly for the purpose of obtaining the necessary funds; subscriptions not to exceed one guinea, and smaller sums will be thankfully accepted. These may in the meantime be sent if desired to Mr. HARRY J. VEITCH, who has kindly consented to be chairman of the committee, or to the Rev. H. HONYWOOD D'OMBRAIN, who will act as secretary.

PARAFFIN - NAPHTHALENE EMULSION.—The paragraph on this dressing for Hops and fruit trees, published in our last issue, is, as the patentee states in a letter received by us, a specification of his German Patent 88,566, 1896, a replica of his English patent, 13,201, 1895. This being the case, readers of the *Gardeners' Chronicle* should be warned not to infringe the patent rights, which are vested in an English firm. An arrangement has been made by which all residents in the administrative counties of Kent and Surrey can make any of the washes covered by the patent for their own use, and any such persons who apply to the South-Eastern Agricultural College, Wye, near Ashford, will receive full particulars for preparing the washes successfully. It has only been introduced to Hop-growers so far, and its superiority as a general wash for garden and greenhouse plants will shortly be brought before the gardening world.

HOME CORRESPONDENCE.

REDUCING THE HEIGHT OF TREE-FERNS.—Mr. Baxter has overlooked the principal point in my letter. I said that in their native countries they could be cut off at any height, and the top, if planted, would grow at once. I should not hesitate to treat any Tree-fern in this way, and should have no fear of the result. We cut 12 inches off ours, not because we dare not cut more, but because by so doing we keep the plant at the exact height we want. If there was any doubt as to the result, we should bind the stem round with moss, and keep this damp, until the roots had grown enough to make it safe to amputate. *Thos. Fletcher, Grappenhall, Cheshire.*

STRAWBERRY BEARING TRAINS TO EDINBURGH.—I happened to be at the Waverley Station last Saturday morning about 8 A.M., and saw the second special Strawberry-train run in from Kent. It consisted of twenty carriages, almost wholly freighted with Strawberries in small baskets with cross-handles, containing nearly two quarts each. The entire platform near the special was crowded with these and other fruit-baskets and punnets, consigned mostly to a few of the wholesale fruit-dealers of Edinburgh, being the second special on one morning. I took

the trouble to look round again later, and found that the whole of the Strawberries had disappeared before mid-day. One or more Strawberry specials come in every morning; the fruit arriving in superb condition. Glasgow, Aberdeen, Dundee, and other towns have also their Strawberry specials; and later on the current of commerce will be reversed, and the granite city and district will send Strawberries in special trains to London, Manchester, &c. Those of us who have been advocating for years the marketing of fruits in small quantities, thus linking producers and consumers as closely and promptly together as possible—are abundantly satisfied with these special Strawberry-trains filled with small lots. The baskets, made of peeled Willows, are strong and clean, and greatly strengthened by their handles of peeled Willows going across and under them. They are filled with fruit, without a leaf under, at the sides, or over them, and covered with sheets of water-proof paper, on which is boldly printed the names of the consignees. I have just purchased, unpacked, and helped to consume one of these baskets of Sir J. Paxton Strawberries that arrived by the fruit special this morning. There was hardly a stain on the basket, and the quality excellent throughout. Purchasers are charged sixpence on these baskets, to be repaid in full if returned to the wholesale or other dealers. Thousands of baskets are returned every night whence they came, and in such cleanly condition as to be ready for immediate use. This express collection and cheap carriage of empties, and the cheap returnable boxes, initiated and so successfully carried through by the Great Eastern Railway in the south, are satisfactory circumstances. Hitherto, and in almost all directions, returned empties have proved a dead weight on trade and commerce. But if baskets and boxes are cheapened to the lowest possible limit consistent with strength, security, and cleanliness, returned empties will become a trouble of the past. *D. T. P., June 29.*

MONARCH STRAWBERRY.—I planted a few runners of this variety last October, and they have exceeded my expectations. The plants are robust in growth, and they have produced an enormous crop for the first year, some of the fruits scaling 2 oz. I planted them by the side of Royal Sovereign and Noble, and gathered fruits from all three varieties upon the same day. This Strawberry is likely to be very popular in the South of England, as it will travel to Glasgow as well as Royal Sovereign will travel to London. In fact, there is very little difference in the fruit when it is two days old, which is an invaluable desideratum. *Kent.*

EARLY-FRUITING STRAWBERRIES.—In directing attention to some of the varieties of the Strawberry which possess leaves with short petioles, few of your readers resident in England would assume that I was not well aware that open-air plants south of the Tweed bloomed earlier than in the North, or that I had any intention of depreciating such a splendid Strawberry as Royal Sovereign, or other of Laxton's Seedlings, Veitch's Perfection, &c. But examining a group of Strawberries in the same garden, on the same day, I simply noted the fact that the Princess of Wales and Queen of Denmark were abreast of Garibaldi, the Prince of Wales forming a good third to the other two seedlings, and that all three varieties had smallish leaves, and short and slender leaf-stalks, which are valuable characteristics for early forcing. Of course, where space under glass is virtually unlimited (a rather rare occurrence even now, and wholly unknown in my early career), the size of the leaves and length of the leaf-stalks would be of less moment; but in most Strawberry-pits and houses, the shorter, more compact, and horizontal the foliage, the more, the finer, richer coloured, and higher-flavoured the fruit. And hence experienced growers in search of improved varieties, having satisfied themselves as to quality, are next careful to learn the habit and height of the varieties, that they may gather most fruit of the highest quality in the least time from the smallest area. *D. T. P.*

ROSES.—Why should the claims of fragrance in Roses be considered such a minor point of importance, and be left without any systematic reference in most catalogues and by most writers? Whereas there may be one lover among a hundred of this popular flower who exhibits, and therefore ignores fragrance, there are ninety-nine, or say 999 among 1000, who admire varieties on account of their relative fragrance. I raise my voice for the hundreds and thousands unrepresented in horticulture, to say

that Roses not fragrant be classed separately from those that are, as a feature more distinct than any other of real value. I refer to the pronounced fragrance of attar of Roses for my favourites, not the thinly sweet ones, and include La France, Sénateur Vaisse, and Prince Camille de Rohan, on the one hand, with such as Maréchal Niel, Belle Lyonnaise, &c., on the other, as the true types of fragrance, and hope this distinction may be carried into practice. H. H. R., Forest Hill.

PEARS.—Your article in the first special commemoration number, referring to "Fruits of the Victorian Era," surely errs in its reference to Pears, and in depreciating the character of old varieties, and naming the following as occupying no high rank to-day. I emphatically protest, for Marie Louise is barely superseded even by Doyenné du Comice, the only acknowledged peeress among Pears. Further, Citron des Carmes is the best of its season; and hardly less can be said about Williams' Bon Chrétien and even Jargonelle, provided the latter is grown on a bush, and picked just when coming off the stalk. Glou Morceau and Duchesse d'Angoulême (the latter if French grown, tons of which our neighbours across the channel send us annually) are equally meritorious, and, indeed, it strikes me that hardly any omission from your list could be made without excluding one of the very best and representative of the choicest eating Pears of the day, nor the two varieties of cooking Pears named from the class of the latter. H. H. R., Forest Hill.

THE RECENT HAIL-STORM.—On Thursday, June 24, a storm of great severity passed over parts of Middlesex, Herts, and Essex, accompanied by terrific thunder and lightning, doing an enormous amount of damage to property and crops. Crops of Wheat and Barley have suffered greatly, as in the track of the storm field after field can be seen where the hail cleared off all the ears. Trees are uprooted, and branches strewn in all directions, houses unroofed, chimneys blown down, windows have every pane of glass broken out. The storm came from the westward, and in my own house, three windows facing in that direction have lost every pane. Here, at Hylands, we are great sufferers, all the glass in most of the glasshouses in the kitchen and flower gardens is smashed to atoms. The crops of Cucumbers, Melons, Grapes, Peaches, plants, &c., are completely wrecked, and the crops entirely ruined. The bedding plants are broken down and battered into the ground. Market gardeners in the neighbourhood of Chelmsford have greatly suffered, among the principal sufferers are Messrs. Saltmarsh & Sons, F. Harris, Baddow Road; Edwards, St. John's Road; T. Simpson, Mildmay Road; and Messrs. Millers, Coval Lane; besides several other smaller market gardeners and private places. I saw plenty pieces of ice as big as thumb-pots, some weighing as much as 8½ oz. William J. Piper.

—At Chelmsford and district, Ponder's End, Enfield, Enfield Highway, Waltham Cross, Helleston, and Harrow, more than sixty nurseries suffered severe damage. Panes of 21-oz. glass of all sizes were completely riddled in some places, and considerable damage was done to the Grapes, Cucumbers, Tomatoes, and all kinds of plants in pots. Thirty of the sufferers were insured with the Nurserymen, Market Gardeners' and General Hailstorm Insurance Corporation, of 2, King Street, Covent Garden, who immediately assessed the damage done and paid the claims six days after. One nurseryman lost 70,884 square feet of 21-oz. glass, and his claim at 3d. per square foot amounted to £886 1s. G. M.

TWO HYBRID HEMEROCALLIS.—Having been disappointed in seeing the flowers at the York Show on Wednesday, the 16th inst., owing to the tents being all blown over, and made a complete wreck by a storm of wind, I wandered a little way further, and visited Mr. Yeld's garden at Clifton, which is pre-eminently one of Lilies, Iris, and Hemerocallis. The latter are found all over the place in every available nook and corner, producing hundreds of flowers of various shapes, sizes, and shades of colour. Mr. Yeld has taken much pains in crossing the various species of Hemerocallis, most of which are natives of China and Japan. Of the numerous crosses which have been raised by him, none attracted my attention so much as those named Frances and Flame; the former a very dwarf plant, with numerous large, bright yellow, trumpet-shaped, erect blossoms. Unfortunately, however, the raiser does not speak of it as being a robust grower, otherwise it would be an excellent subject for massing on rockeries and in other suitable

positions. The latter variety, which was obtained from Flava x Sieboldi, is, I consider, decidedly the better of the two, being showy and distinct. It makes vigorous growth, possesses ample foliage, and sturdy flower-stalks from 10 to 20 inches in height, forked at the top, and bearing eight to ten clear orange-coloured blossoms of about 4 inches in diameter and 3 inches long. The buds are purple or brownish-purple, highly polished, which colour is retained on the outer segments, even after the flower is fully expanded. Its freedom to flower may be imagined when I state that in a space of about 2 feet square there were forty flower-stems with more than 360 blossoms. R. Potter.

THE PROGRESS OF HORTICULTURE IN THE VICTORIAN ERA.—Will you permit me to make a suggestion which I feel sure would prove as pleasant as profitable to most of your readers. It is briefly to the effect that as your souvenir of the long reign of the Queen known to this or any age, you might republish, in pamphlet form and popular price, your record-articles on the progress of horticulture. Most appropriately associated with these should be your summary of progress chronicled June 18, 1887, in connection with the fiftieth anniversary of Her Majesty's accession. The summary of progress chronicled on January 8, 1891, in connection with the Jubilee of the *Gardeners' Chronicle*, would add greatly to the horticultural value and literary interest of such a memorial brochure. If without greatly adding to the cost, such a handy object-lesson between the then and now, the past of sixty years ago and the present of horticulture to-day, in say such genera as the Streptocarpus, Gloxinia, Begonia, Cannas, and Tomatoes of 1837 and 1897. Probably the most violent contrast would occur in the old rough red Tomato, which hardly anybody knew and fewer still cared for, and the crowded ranks of Tomatoes of all forms, sizes, colours, and flavours which struggle in vain to keep pace with the insatiable demand. And yet in these other classes some of us can remember when there were but one Streptocarpus Rexi, one Gloxinia (the blue insignia), not one of the present race of tuberous Begonias, and one Canna, or Indian Shot plant which was grown for its curious seeds as much or more than for its fine foliage or brilliant flowers, which had hardly begun to develop grandeur or beauty sixty years ago. D. T. Fish, Edinburgh.

SOCIETIES.

ROYAL HORTICULTURAL.

JUNE 29.—The meeting on Tuesday last in the Drill Hall, James Street, Westminster, was remarkable for an unusual number of exhibits. The Hall was full to overflowing, and the great bulk of the exhibits was composed of flowers or of flowering-plants. There was rather more fruit than is sometimes seen in early summer, but it did not occupy a great amount of space. Orchids were decidedly fewer than usual. One of the large central tables was filled with Roses, entered in competitive classes. The quality of the Roses, though not extra, was fairly satisfactory, and in each class there was considerable competition.

Floral Committee.

President: W. Marshall, Esq., chairman; and Messrs. Jno. Fraser, H. B. May, R. Dean, Geo. Stevens, James Hudson, J. F. McLeod, C. J. Salter, R. M. Hogg, J. Fraser, W. Bain, J. W. Barr, Chas. E. Pearson, Chas. E. Shea, H. J. Jones, H. J. Cutbush, Ed. Beckett, C. Blick, and Harry Turner.

Messrs. CUTBUSH'S Carnations were arranged in a large group immediately facing the entrance, and it was composed of plants of the Souvenir de la Malmaison type. The variety Princess of Wales was represented most largely, but there were also plants of the crimson-flowered Prime Minister, the striped Lady Grimston, the pale-flowered Blush, and a variety named Rose. The group was arranged effectively (Silver Flora Medal).

A magnificent group of Carnations staged by Mr. J. F. McLeod, gr. to J. P. MORGAN, Esq., Dover House, Southampton, consisted of large specimens, abundant in uncommonly clean and healthy foliage down to the base, and well flowered; the plants demonstrated in a remarkable manner the immense value of the Souvenir de la Malmaison type as decorative plants. There were upwards of thirty blooms on each of nine of these plants, and the blooms were large in size, and deep in colour. Faced and interspersed with Adiantum Fern, the group was a fine instance of successful culture applied to this type of Carnation, which have seldom, if ever, been exhibited in such condition (Silver-gilt Flora Medal).

An Award of Merit was recommended to Carnation Hempsden, flowers of which were shown by Mr. R. SMITH, Esq., The Warren, Hayes, Kent (gr. Mr. Blick). It is a salmon-rose coloured flower of fine form.

Tuberous-rooted Begonias were shown by Messrs. H. CANNELL & SONS, Swanley, Kent, in a very bright group indeed. Double and single-flowered varieties were displayed. Hon. Wilfrid Laurier, rosy-pink, with fringed margins; Rev. E. G. Little, bright crimson; Lady Lindsay, large soft yellow; Dr. Nansen, very dark crimson, were some of the best doubles; and of singles there were Golden Hind, Mr. Pack, W. Marshall, and others of capital quality (Silver Banksian Medal).

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, obtained an Award of Merit for double-flowered Begonia Lady Pearson, very fine salmon-scarlet flower, unusually deep; and they also showed three choice varieties of Caladiums.

Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nursery, Chelsea, were awarded a Gold Medal for an exhibit on either side of the door consisting of a group of excellent Conifers, similar to those we noticed at the Crystal Palace last week, all of them capital specimens from the open ground, and representative of the most ornamental and distinct species and varieties. Many variegated forms were remarked; and a golden form of Libocedrus decurrens (Thuja gigantea) was awarded a First-class Certificate.

From Messrs. VEITCH were also shown flowering sprays of Indigofera decora alba, of the white-flowered Escallonia Philippiana, Robinia hispida, Calycanthus levigatus, with dull purple flowers; and Diervilla sessifolia, a yellow-flowered species; Hedysarum multijugum, Melosma myriantha, and a pretty variegated Phlox named Comtesse de Jarnac. Messrs. Veitch also had a collection of flowers of Sweet Peas neatly displayed in glasses upon white paper, relieved with Asparagus foliage. Both English and American novelties in these popular plants were well represented.

Ferns were shown by Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, in a group of plants which contained a choice selection of varieties and species of Adiantum of ornamental character. The collection of varieties was most exhaustive. An Award of Merit was gained by Adiantum fasciculatum, an erect-growing cuneatum-like Fern, with fasciculated pinnae—a very ornamental and desirable Fern. The group was awarded a Silver-gilt Banksian Medal.

Mr. W. WELLS, of Earlswood, exhibited a group of Chrysanthemums in bloom, most of them novelties, but not sufficiently in character, probably, to be reliable.

A grand display of hardy herbaceous plants in flower was made by Messrs. BARR & SONS, King Street, Covent Garden. Potentillas, Shirley and Iceland Poppies, beautiful varieties of Iris Kämpferi, Coropsis, Hemerocallis Thunbergi, and the much showier H. aurantiaca major, figured in *Gardeners' Chronicle*, July 20, 1896 (Silver Banksian Medal).

Mr. THOS. S. WARE, Hale Farm Nurseries, Tottenham, had a group of perennial and other hardy flowers, including a few plants of the smaller-growing species. Several of the rarer species of Lilium were noticeable in this representative group (Silver Flora Medal).

Messrs. KELWAY & SONS, Langport Nurseries, Somerset, covered a considerable table space with an exhibit of Delphinium spikes, Cannas, flowers of Gaillardia Irises, and a few perennial herbaceous species. The varieties of Gaillardia were capital, large well-formed flowers of distinct or brilliant colouring. The varieties of Iris Kämpferi were beautiful in every case, Beauty, Matchbox, Raphael, Amaryllis, Bride Elect, Langport Flood, Aphrodite, Mikado, Harry, Hercules, and Via Lactea, all distinct in markings. Messrs. KELWAY'S Delphiniums are well known, and in this instance some of the varieties were well shown (Silver Banksian Medal).

Messrs. J. CHAZAL & SONS' exhibit included a miscellaneous assortment of hardy herbaceous flowers, and a few sprays of ornamental-leaved shrubs, also Violas in sprays (Silver Banksian Medal).

Messrs. R. WALLACE & CO.'s exhibit from Colchester contained about a dozen spikes of the exceedingly showy Hemerocallis aurantiaca major, a feature in itself. Iris Xiphoides in variety, Lilium unbellatum, L. Thunbergianum, L. pardalinum, L. Parryi, yellow; L. Grayi, L. pardalinum californicum, a very pretty distinct spotted Lily with scarlet tips; the darkest coloured L. Thunbergianum, viz., Horstman, and many other choice Lilies. Calochortus Eldorado and C. venustus were shown in considerable variety, including a rare lot of C. venustus var. Cloth of Gold, a pretty yellow-flowered variety with very conspicuous blotches (Silver Flora Medal). Calochortus clavatus, shown by Messrs. R. WALLACE & CO., and C. G. VAN TUBERGEN, Jun., Haarlem, was recommended an Award of Merit. It is a strong-growing species, producing large golden-yellow coloured flowers, with purple anthers, and deep brown markings at the base of the flower. A very handsome and apparently free growing species.

Another excellent collection of hardy herbaceous flowers was staged by Mr. M. PRITCHARD, nurseryman, Christchurch, which included a very comprehensive list of choice species (Silver Banksian Medal).

Messrs. DOBBIE & CO., Rothessay, N.B., and Orpington, Kent, made a gay display with a large variety of Sweet Peas; also Violas in sprays, in great variety; and a good collection of Fancy Pansy blossoms (Silver Flora Medal).

Sweet Pea Cupid, with pink-coloured flowers, was exhibited by Messrs. W. BURRIS & CO., Philadelphia. It was well flowered, and very pretty as grown in pots, but specimens in the open ground appear to fall in the same respect as does the white form. Several other Sweet Peas from the same firm are of much excellence, especially Aurora, a rose and white-coloured variety.

Mr. J. G. FOSTER, Brockhampton Nurseries, Havant, had a collection of Sweet Peas in numerous varieties (Silver Banksian Medal).

Mr. J. Lamb, Burton Joyce, Notts, exhibited flowers of a White Pink, named Albino, which received an Award of Merit at the last meeting.

Sir TREVOR LAWRENCE, Bart., Burford, Dorset (gr., Mr. Bain), exhibited specimens of a robust Forget-me-Not, named *Myosotis palustris grandiflora*.

Messrs. F. SANDER & Co., St. Albans, in conjunction with a few Orchids, staged a group containing some excellent "picture" plants and others. The new double *Petunia*, named Mrs. Fred Sander, and figured in these columns last week, was shown in much beauty, and a few very strong plants of the pure white-flowering *Watsonia Ardernei*, which had spikes upwards of 4 feet high, each of which produced five or six-score of blooms. Then there were *Begonias* with very prettily-marked foliage, *Anthuriums*, and other plants. A Botanical Certificate was awarded to a pretty, slender-looking *Encephalartos*, named *gracilis*, having narrow leaves, and being much lighter in appearance than most of the *Encephalartos*. The group was awarded a Silver-gilt Banksian Medal.

ROSES

Mixed Class.—The class for twenty-four single trusses was won by T. B. HAYWOOD, Esq., Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter); S.-Marie Rodocanachi, Captain Hayward, Gustave Piganeau, Marchioness of Londonderry, François Michelon, Caroline Testout, Louis Van Houtte, La France, Horace Vernet, L'Havre, and Beauty of Waltham, were the best flowers in a satisfactory stand. C. J. GRAHAM, Esq., Wrydelands, Leatherhead, was 2nd, whose collection was composed of an even lot of flowers, most of them of good colour, but lacking in size and substance; 3rd, the Rev. J. H. PEMBERTON, Havering, Essex. Several other stands were in competition.

O. G. ORPEN, Esq., Hillside, West Bergholt, Colchester, won the class for twelve single trusses, distinct, by far the best bloom being Kaiserin A. Victoria. Mrs. W. J. Grant, also very fine, was rich in its distinctive colour. Very little behind was the Rev. A. FOSTER-MELLIAH, Sproughton Rectory, Ipswich. The blooms from this well-known amateur were larger but less perfect in form, Maréchal Niel and Germaine Caillot were the best.

The best six blooms distinct came from G. W. COOK, Esq., The Briers, Torrington Park, North Finchley. The varieties, Captain Hayward, Caroline Testout, Ulrich Brunner, Mrs. Jno. Laing, La France, and Medea, were very commendable. The Rev. F. PAGE ROBERTS, Scole, Norfolk, was 2nd.

The best stand of nine single trusses of one variety was from C. J. GRAHAM, Esq., and the variety was Kaiserin Augusta Victoria, the blooms were of moderate size and good form. T. B. HAYWOOD, Esq., was 2nd, with Mrs. Jno. Laing.

The best six blooms of one variety were from O. G. ORPEN, Esq., Hillside, West Bergholt, who showed the same variety as the winner of the class for nine blooms. La France, shown by R. H. LANGTON, Esq., was 2nd.

Tea and Noisettes.—The 1st prize in the class for twenty-four single trusses, Tea or Noisette, was won by O. G. ORPEN, Esq., with a stand of blooms exhibiting moderate quality, except in a few instances, such as Bridesmaid, Ernest Metz, The Bide, Sylph, Souvenir d'Elise Vardon, Madame Cusin, &c., which were very good. C. J. GRAHAM, Esq., was 2nd, whose stand contained a good bloom of Cleopatra.

The Rev. HUGH A. BERNERS, Harkstead Rectory, Ipswich, was 1st for twelve single trusses, including good blooms of Catherine Mermet, Ernest Metz, &c. 2nd, the Rev. A. FOSTER-MELLIAH.

The winner of the class for six single blooms was Rev. F. PAGE ROBERTS; and R. H. LANGTON, Esq., was 2nd.

C. J. GRAHAM, Esq., was 1st for nine single trusses of one variety, showing Innocente Pirola; and O. G. ORPEN, Esq., 2nd, with Anna Olivier.

The 1st prize in the class for six trusses fell to R. H. LANGTON, Esq., who had Hon. Edith Gifford; followed by Rev. A. FOSTER-MELLIAH, who showed Souvenir d'Elise.

Messrs. W. PAUL & SON, Waltham Cross, Herts, exhibited a number of capital examples of cut blooms of Roses of their own introduction. The best of these were Spencer, Marchioness of Lorne, Enchantress, Star of Waltham, Pride of Waltham, Sylph, Clio, Duchess of Bedford, Waltham Standard, a fine Rose of a deep purplish-crimson colour; Aurora, deep pink in the centre, and pale pink outer petals, the latter reflexing—a charming flower. Marquise Litta, a French H.T., is what may be called a very deep rose-coloured Niphetos, the unexpanded flower-buds being remarkably nice-looking (an Award of Merit was obtained for this variety). Many more varieties were exhibited than those named above, and the exhibit was a beautiful and interesting one (Silver Banksian Medal).

Messrs. PAUL & SON, Cheshunt, were fortunate in obtaining three Awards of Merit for H. T. Roses. One of these was Souvenir de President Carnot, which in bloom and foliage is suggestive of Souvenir de la Malmaison, but the former has a curious drooping character, and the blooms are probably more Tea-shaped. They are white to faintest blush in the centre, and of excellent form. Madame A. Chateau, also a hybrid Tea variety, is almost a new shade of colour in Roses, and may be described as warm reddish rose, fading to pale pink in the outer petals. The 3rd award was to Kaiserin Augusta Victoria, an excellent white or pale lemon-coloured rose, now fairly well known.

LORD PENZANCE, Eashing Park, Godalming (gr., Mr. Baskett), who showed blooms of a number of hybrid Roses and Sweetbriars, demonstrated what splendid results have followed the work that has been done at Eashing Park.

Roses were also shown by Mr. WILLIAM RUMSEY, Joyning's Nurseries, Waltham Cross, and a fine lot of blooms the stand

contained, including some of the comparatively new and vigorous-growing variety, Mrs. Rumsey (Silver Banksian Medal).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), de B. Crawshaw, E. Hill, J. Douglas, W. H. Young, T. W. Bond, J. Jaques, W. Cobb, A. H. Smee, S. Courtauld, R. Brooman-White, H. J. Chapman, C. Winn, F. Mason, and H. M. Pollett.

The feature of the show, so far as the Orchids were concerned, was the remarkably fine group of rare plants staged by Messrs. JAR. VITCH & SONS, LTD., King's Road, Chelsea, and for which they received a Silver Flora Medal. Among the many fine hybrids shown, the most remarkable was the new *Laelio-Cattleya* × *Eudora superba* (C. Mendelii × L. purpurata ?), which comes nearest to a fine form of L.-C. × *eximia*, but with colours lighter and brighter. The sepals and petals of the large perfectly-formed flowers were white, prettily tinged and veined with lilac-rose; the front of the lip rich glowing purple (First-class Certificate). Other remarkable hybrids in the group were the new *Spathoglottis* × *aureo-Veillardii*, greatly improved since first shown at the Temple; the flowers open light chrome-yellow, with purple spots, and the labellum has a purple apex, which on maturing changes to cream colour with the same purple markings; *Phalenopsis* × *Ludde-vioacea*, with bright rose flowers; P. × *Vesta* (rosea leucaspis × *Aphrodite*); the fine large rose-purple *Disa* × *Veitchii*, which bids fair to displace D. grandiflora as first favourite; *Dendrobium* × *illustre* (*chrysotoxum* × *Dalhouseianum*), and D. × *porphyrogastrum* (Huttoni × *Dalhouseianum*), two very fine hybrids; *Laelio-Cattleya* × *Canhamiana*, L.-C. × *eximia*; and the delicately-tinted *Sobralia* × *Veitchii*. Of the species there were fine pans of *Dendrobium Phalenopsis Schroderianum*, the handsome D. *glomeratum*, D. *Bensoniae*, strong, well-flowered specimens of *Phaius Humbloti*, *Epidendrum nemorale*, *Sobralia macrantha*, *Aërides multiflorum* Lobbi, *Anguloa Ruckeri*, A. uniflora Turneri, fine varieties of *Cattleya Mossiae*, C. Mendelii, and *Laelia tenebrosa*; *Cypripedium superbiens*, with twenty-four flowers; a fine pan of *Stenoglottis longifolia*, *Aeranthus grandiflorus*, &c.

Messrs. HUGH LOW & Co., Clapton, staged a good group composed principally of remarkably fine varieties of *Cattleya Mossiae*, including the white C. M. Wagneri, and C. M. Reineckiana. Among the coloured forms, C. M. maxima was a noble flower; and C. M. Bronze Queen had a richly-coloured lip, in which bronzy-orange predominated. Messrs. Low also showed *Cypripedium* × *Mrs. R. V. Low* (niveum × ?), of unrecorded parentage. It is of middle size, a very distinct flower, white, the petals and upper sepals lightly marked with purplish spots. The lip is laterally compressed, and shows a ridge in front, the whole flower being peculiar and attractive (Award of Merit).

In the group of miscellaneous plants staged by Messrs. F. SANDER & Co., were *Lycaste leucontha*, L. Mooreana (provisionally named), with green flowers of the L. gigantea class; *Cypripedium* × E. Holt (Curtisii × *prastans*), *Dendrobium infundibulum*, D. *speciosissimum*, *Sobralia Veitchii*, S. *Amesiae*; varieties of *Odontoglossum Harryanum*, one of which had very light-tinted flowers; *Cattleya Schilleriana*, *Aërides expansum*, *Stenoglottis longifolia*, *Miltonia vexillaria*, and *Calanthe Sanderiana*.

FRED HARDY, Esq., Tyntesfield, Ashton-on-Mersey (gr., Mr. T. Stafford), staged a small group, in which were three plants of *Miltonia vexillaria superba*; *Laelio-Cattleya* × *Hippolyta*, the very richly-coloured L.-C. × *Arnoldiana magnifica*; *Laelia tenebrosa Charlesworthii*, one of the darkest and richest in colour of the species; *Cattleya Mossiae* Wagneri and C. M. *Harlye*, the last-named a fine, large, pure white form with a slight tinge of lilac colour on the lip.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. J. Chapman), showed *Cypripedium leucocentrum grandiflorum*, resembling C. *bellatulum*, but with a wholly white lip. The plant was first known in gardens as C. *leucocentrum*, afterwards as C. *Godefroyae leucocentrum*, but this specimen more nearly resembled C. *bellatulum*. As it differs from both in the wholly white lip, the name *leucocentrum* is appropriate. Mr. MEASURES also showed the singular-looking hybrid *Cypripedium* × *Salus*, with greenish-yellow flowers tinged with purple—probably a C. *concolor* cross.

T. B. HAYWOOD, Esq., Woodhatch, Reigate (gr., Mr. Salter), sent two grand spikes, taken from his white *Miltonia vexillaria* "Daisy Haywood," which had previously been pronounced the best white variety, and awarded a First-class Certificate. The pure white flowers on this occasion measured 3 inches across the labellum, and exhibited no colour except a clear yellow mark at the base of the lip (Cultural Commendation).

Mr. N. BLANDFORD, Bitterne, Southampton, showed *Cattleya Warscewiczii* without the usual yellow spots on the lip.

Mr. H. A. TRACY, Twickenham, showed flowers of five good varieties of *Cattleya Mendelii*; and the Rev. F. PAYNTER, Stoke Hill, Guildford, sent *Phaius* × (Humboldt × bicolor), with sepals and petals yellow, tinged with red, and lip coloured dull rose, with orange lines at the base.

Fruit and Vegetable Committee.

Present: Messrs. Jos. Cheal, A. F. Barron, Jas. H. Veitch, Alex. Dean, Jno. A. Laing, G. H. Sage, Geo. Wythes, H. Balderson, J. Smith, W. H. Divers, G. Norman, and Robt. Fife.

The exhibits which came before the committee were few

in number; still, several very creditable productions were noted. It is notorious that Melons are lacking in flavour so far; and none of those brought before the committee on this occasion met with recognition, although the fruits left nothing to be desired on the score of size or appearance.

Melons were shown by Messrs. W. DAVIES, A. BISHOP, and C. MARTIN. Mr. G. Wythes, gr. to Earl Percy, Syon House, Brentford, showed a few shoots of the Loquat with ripe fruits (Vote of Thanks), and a yellow-fleshed Melon of good flavour named Thames Bank.

An exhibit of Peaches, similar to the one present last year from the same London district, came from Mr. G. Kelf, gr. to Mrs. Annot, South Villa, Regent's Park. It consisted of twenty-five fruits of Dymond as fine as it is possible to grow this variety; eighteen of Royal George of large size and grand colour; and Dr. Hogg, rather smaller than Royal George, but wonderfully bright in colour. A Cultural Commendation was awarded.

Mr. J. Hudson, gr. to Messrs. de ROTHSCHILD, Gunnersbury House, received a Cultural Commendation for an excellent exhibit of four dishes of as many varieties of Plums, the produce of potted trees. These were Kirke's, Early Transparent, Reine Claude de Comte Athènes, and Jefferson. He showed also dishes of Cherries Black Circassian, and Bigarreau Napoleon. Some fine, well-filled pods of Carter's Early Morn Pea came from Mr. E. Beckett, gr. to H. H. Gibbs, Esq., Aldenham House, Elstree.

Messrs. LAXTON BROS., Bedford, showed a new Strawberry named Mentmore out of Noble and British Queen, having much of the colour of the former, and the shape of the latter. It is, we should say, an improved Noble, and it is a heavy cropper (Award of Merit). This firm showed big fruits of Monarch, Commodore, Alma, and Leader, fine in point of size, and good bearers all, it is said; but we must know more about them. Thomas Laxton Pea is said to excel in earliness the Earliest-of-All, sown alongside of it on the same day. It has a large pod, with dark green marrowfat-shaped seeds. The height is 3½ feet. Fine long-pod Beans Bunyard's Exhibition, and Gradus Peas were shown by Messrs. KELWAY & SONS, Langport, Somerset.

The Lecture.

THIS was by Mr. J. CHEAL, and dealt with the "Storing and Preserving of Fruit." Commencing with small fruits, such as Currants, Gooseberries, Cherries, Strawberries, and Raspberries, a few hints were given upon the preservation of these by converting them into jam, and the process by which the fruits are preserved whole was explained. But to have fruits suitable for making puddings and tarts, it is necessary to "bottle" them, and this process was therefore described, and by means of several kinds of bottles, Mr. Cheal demonstrated how the old system of stopping by means of corks or skin may be superseded by various modern devices, which reduce the necessary labour to a minimum, and at the same time are decidedly more efficacious. Some of them are fitted with an india-rubber ring over which the stopper is screwed; and there are several patents, the principle of which consist in placing the stoppers over the bottle when at boiling-point, by which means air is excluded, and as the contents become cold, so are the stoppers hermetically sealed, with the pressure of the atmosphere above them. In order to unstop the bottles, the stopper has to be pricked, when it will immediately fall off. They may be soldered, and used again and again. (See *Gardeners' Chronicle*, May 2, 1896.) Plums could be maintained in natural freshness for some weeks by means of cold storage; but, as some experiments conducted by the Royal Horticultural Society a few years since proved, the temperature should be kept a little above the freezing-point; never below it, or deterioration ensues. Whether they are intended to be preserved thus, or by being made into jam, or by bottling, Plums should be gathered before they are fully ripe. Mr. Cheal then went on to describe the method of preserving Plums by means of evaporation or drying, and exhibited a small paraffin stove suitable for the purpose. Thick-skinned varieties were needed for this, and they should be submitted to an even temperature, the drying to be done at three times, between each of which the fruit should be allowed to become cold. To preserve Apples in the natural state, they should be kept cool, but not subjected to frost, unless very slight. The temperature should be as even as practicable, and the atmosphere not excessively dry. Directions for constructing a fruit-room likely to afford these conditions were then given, as has been frequently done in these columns. Mr. Cheal reminded his hearers not to shut up the fruit-room too closely before the Apples have been gathered long enough to become moderately dry. The preservation of Apples by evaporation was next alluded to, and an American machine displayed that peeled, cored, and cut up each Apple by a very efficient and quick method. The drying of Apples is done at one operation. Pears require a hotter temperature during storage than Apples, or the flavour is depreciated; and most of us know they are capable of being preserved in a very agreeable and satisfactory condition by means of bottling them in syrup.

The Rev. W. WILKS gave some interesting experience he had had in bottling fruits, and differed considerably from some of the details in the methods of Mr. Cheal, notably in adding cold water to the fruit before the bottles are heated, instead of applying boiling water afterwards. Mr. Wilks, however, was able to declare that all fruits were capable of being preserved in splendid condition in bottles, for ten or probably a hundred years, and he wisely recommended all amateur fruit-growers to give the process a trial, and thus economise their supply of fruit.

LINNEAN SOCIETY OF LONDON.

JUNE 17.—Dr. D. H. SCOTT, F.R.S., exhibited original preparations by Prof. Ikano and Dr. Hirase, of Tokio, Japan, illustrating their discovery of spermatozooids in two Gymnosperms Phanerogams, namely, *Ginkgo biloba* and *Cycas revoluta* (cf. *Bot. Centralblatt Bd., lxxix.*, Nos. 1-2, 1897, and *Annals of Botany*, June, 1897). The slides showed the spermatozooids while still in the pollen-tube before the commencement of active movement. In the case of *Ginkgo* one section showed the two male generative cells, closely contiguous, and enclosed in the pollen-tube. The general structure resembles that in many other Conifers at the same stage, e.g., *Juniperus virginiana* and *Pinus silvestris* (Strasburger, *Hist. Beitrage*, iv., pl. 2). In *Ginkgo*, however, each generative cell showed a distinct spiral coil, situated in each cell, on the side remote from its neighbour.

Another preparation of *Ginkgo* showed a series of sections across the micropyle, passing through a pollen-tube and its generative cells, the plane of section being in this case approximately parallel to the surface of contact of these two cells, through which four of the sections passed. In the two terminal sections of this series the spiral coil was clearly shown, consisting of about three windings. The spiral is connected with the nucleus of the cell, but whether it is itself of nuclear or cytoplasmic origin is not certain.

In the preparation from *Cycas revoluta*, several pairs of generative-cells were shown; in some cases the pollen-tube enclosing them was intact. The spiral coils in some of the generative-cells were surprisingly clear, consisting of about four windings. A distinct striation was visible in connection with the coil, probably indicating the presence of the numerous cilia described by the Japanese discoverers.

The facts admit of no other interpretation than that given by these authors, namely, that in both *Ginkgo* and *Cycas* each generative cell gives rise to a spiral spermatozoid; the latter, by its own movements (actually observed by Dr. Hirase in the case of *Ginkgo*) no doubt travels from the end of the pollen-tube to the female cell.

Mr. MILLER CHRISTY, F.L.S., read a paper on "Primula elatior, Jacq., in Britain." He remarked that this widely-distributed continental plant, though figured accidentally in *English Botany* in 1799, was not really detected in Britain till 1842, to which time the totally distinct hybrid Oxlip (*P. acaulis* × *veris*), was, by British botanists, confused with, and mistaken for it, as is still frequently the case. In Britain, *P. elatior* occupies a sharply-defined area, divided by the valley of the Cam, with only two outlying localities, so far as Mr. Christy could ascertain. This area covers the two most elevated and unbroken portions of the Boulder Clay district, the loams and gravels of the river-valleys and the chalk being entirely avoided. The boundary-lines (some 175 miles in length) which had been traced by Mr. Christy with precision were, in consequence, very sinuous. They enclosed together about 470 square miles, over which area the Oxlip flourishes in immense abundance in all old woods and some meadows; while the Primrose (which grows all around) is entirely absent. Along the dividing line between the two, which is very sharply defined, hybrids are produced in great abundance. On the other hand, the Cowslip (which grows both around and throughout the Oxlip-area) very rarely hybridises with it. Mr. Christy believed that the Primrose was, in this country, gradually hybridising the Oxlip out of existence. He then noticed a rare single-flowered variety of *P. elatior*, which he proposed to call *var. acaulis*, and several aberrations, showing upon the screen photographic views of these and of the hybrids, as well as a map of the distribution of the Oxlip in Britain.

Sir JOHN LUBBOCK, Bart., M.P., F.R.S., communicated the substance of a paper entitled "Further observations on Stipules," in continuation of a former paper communicated by him to the Society on March 18 last. The present paper, which was illustrated by diagrams, has reference, *inter alia*, to the Ash, Hop, and two species of Pea (*Lathyrus grandiflorus* and *L. pratensis*).

RICHMOND HORTICULTURAL.

JUNE 23.—This annual early summer exhibition was, as usual, held in the Old Deer Park, and in magnificent weather. The show was, both in extent and quality, materially below its earlier character, due largely to the fixing it upon the day immediately succeeding the Jubilee holiday.

Honorary Groups.—These usually constitute at Richmond the most prominent features, and it was so again this year, in spite of some notable absentees. Foremost comes a splendid group of Malmesdon Carnations, sent by Mr. McLeod, gr. to J. P. MORGAN, Esq., Dover House, Rotherhampton. Most of these plants were but twenty-two months old, but were literally bushes, and each one will next year be permitted to carry fifty blooms. So fine in form and culture were these, that the Special Silver-gilt Jubilee Medal provided was awarded to the group.

Mr. HENRY LITTLE, of Twickenham, through his grower, Mr. Howard, put up a fine collection of Orchids, including Cattleyas, Laelias, Cypripediums, Miltonias, Odontoglossums, &c., in great variety, and showing high culture. This group was awarded the Special Jubilee Silver Medal.

Mr. G. Wythes, gr. to Earl Percy, Syon House, had a fine miscellaneous group of plants; this included Orchids in variety, Carnations, Lilies, Xorais, &c., and made a very attractive feature. Mr. A. Pantrey, gr. to A. J. HOWARD, Esq., Norton Hall, Isleworth, had a nice group of Carnations chiefly. Messrs. J. CARTER & Co. had a very striking central feature in the large tent—a big group of

Petunias, Gloxinias, Tropaeolums, &c., arranged effectively on a low table, and over which were the long arms dressed with moss and Asparagus, as seen at the Temple Show.

Decorative Groups.—Those of the larger area included a very beautiful one from Mr. H. E. FORDHAM, of Twickenham, who took the 1st prize, quite in this exhibitor's best form, and had a base of Gloxinias, very brilliant in colour, and above them small Gypsophila paniculata, set into Maiden-hair Fern, with Lilies, Palms, &c., above. To this group was awarded the special Jubilee Bronze Medal. Mr. J. Gibson, gr. to E. W. WATTS, Esq., Chislewick, was 2nd; and Mr. W. VAUSE, Leamington, 3rd.

Specimen Plants.—These made a poor show, the only fine flower coming from Mr. VAUSE. He had *Pimelia Diosmyfolia*, *Bougainvillea Sanderiana* and *glabra*, *Erica ventricosa*, *grandiflora*, &c.

Pelargoniums.—Mr. C. TURNER, at the hands of that veteran grower, Frost, put up a large group of large-flowered and six fine plants. Just then, in superb bloom, Gold Mine, Marguerite, Duchess of Norfolk, Spotted Beauty, Magpie, and Magpie taking the 1st prize, and was similarly honoured with six beautiful fancies, including The Shah, Delicatum, Mrs. Hart, East Lynne, Ambassadors, and Princess Teck.

The only and very fine semi-pyramidal Ivy-leaf Pelargonium came from Mr. Watts, gr. to Mr. HENRY LITTLE, the best being Massinette, Jubilee, and Gallie. This exhibit also had six very superbly-flowered zonals in Kentish Fire, Alfred Ware, Constance, S. Birkin, J. Miller, and Mores. Mr. J. Smith gr. to W. H. ODLAM, Esq., 2nd.

Orchids, &c.—Mr. H. LITTLE had the best six in a fine Vanda teres with twenty spikes of bloom, a grand Cattleya Warneri of the most beautiful colour, also Cattleyas Mossiae, gigas, imperialis, and Mendell magnificas and Laelia tenebrosa gigantea; Mr. W. H. Young, Orchid Grower to Sir F. WIGAN, Clare Lawn, Sheen, was 2nd, with a fine Cymbidium Lowianum, Miltonia vexillaria, Phalaenopsis Sanderiana, Laelia tenebrosa and Laelia-Cattleya Arnoldiana. Gloxinias were fair, Begonias rather poor plants, and Coleus, &c., indifferent.

Roses were put up in fair abundance, but the blooms soon suffered from the great heat. Mr. B. R. CANT, Colchester, was an easy 1st in the class for forty-eight trebles, and also for twenty-four trebles.

Mr. G. PRINCE, of Oxford, was 1st with twelve trebles, having all Teas. These included Comtesse de Nadailac, Alpha rosea, Golden Gate, The Bride, Princess of Wales, Souvenir d'un Ami, Marie van Houtte, &c. Mr. CANT was 2nd.

Mr. CANT had the best twelve Roses, one variety, H. P.'s, in Mrs. J. Laing; and Messrs. PRIOR were 1st with twelve Teas.

No hardy flowers were visible from anyone.

Bouquets, Table-stands, &c., were largely shown, but even these things were much below average. In most classes for table-stands some professionals of one family seemed to sweep the board.

Fruit.—The best six dishes in a collection came from Mr. Ford, gr. to W. H. ELLIS, Esq., Clovelly, Hounslow, who had good Black Hamburg and Foster's Seedling Grapes, Brown Turkey Figs, Peaches, Nectarines, Strawberries, and a Melon. Mr. W. Tidy, gr. to W. H. D'ARCY, Esq., Stamore Hill, was 2nd, with small, neat bunches of Grapes, good Early Alfred Peaches, Lord Napier Nectarines, &c. Mr. OSMAN, Chertsey, was 3rd. The best three bunches of Black Grapes, capitally finished Madresfield Court were put up by Mr. Blake, gr. to the Earl of OSSLOW, Clondan Park, Guildford; Mr. FORD coming 2nd, with fine though hardly finished Black Hamburgs.

Mr. TIDY was 1st with three bunches of White Grapes, in hardly ripe Foster's Seedling; Mr. OSMAN being 2nd with medium Muscat of Alexandria.

Mr. J. GRAY, Bodorgan, South Wales, had the best dish of Peaches, in Crimson Galand; and Mr. TIDY the best Nectarines, in good Lord Napier.

Mr. G. PARKER, Isleworth, came 1st with two dishes of Strawberries, in big James Veitch and rather rough President; Mr. J. GOODY, of Twickenham, who came 2nd, had also fine Jas. Veitch and distinctly handsome Sir J. Paxton.

Mr. FORD was the only exhibitor of Figs, and also was 1st with handsome Perfection Tomatos.

Collections of Vegetables.—These were generally excellent. In the Society's class for twelve kinds, Mr. C. J. Waite, gr. to the Hon. Col. TALBOT, Esher, was 1st, having a splendid bundle of Asparagus, Cabbage, Telegraph Peas, Magnum Bonum Cauliflowers, Potatos, &c.

In Messrs. SUTTON & Son's class for six kinds, Mr. WAITE was 1st with fine Cauliflowers, Duke of Edinburgh Peas, Early Gem Carrots, Supreme Potatos, Perfection Tomatos, and Canadian Wonder Beans.

In Messrs. CARTER & Co.'s class for nine kinds, again Mr. WAITE was 1st, including here Leviathan Broad Beans, Model Cucumbers, Summer Favourite Carrots, Long White Marrows, Telegraph Peas, &c.

SUTTON HORTICULTURAL.

JUNE 29.—The sixteenth exhibition of this Society was held in the Town Hall, and was in every way a great success. The Roses were all clean, bright, and well formed; while the competition was well up to the average.

In the amateurs' division, R. E. WEST, Esq., Reigate, won for both twenty-four singles and eight trebles, beating Mr. A. SLAUGHTER, Steyning, in each class. Victor Hugo,

F. Michelon, General Jacqueminot, Horace Vernet, and Etienne Levot, were particularly good; but Mr. Slaughter was well ahead of Mr. West for twelve Teas or Noisettes.

In a division for growers of fewer than 2000 plants, Mr. Harris, gr. to E. M. BETHUNE, Esq., Denne Park, Horsham, was most successful, winning for twelve singles, six trebles, and for nine Teas or Noisettes. In each class he was closely followed by P. G. C. BURNARD, Esq.

Mr. M. HODGSON was equally successful in a division for growers of fewer than 1000 plants, beating Mr. H. P. LONDON for nine and six singles, also for four trebles. P. G. C. BURNARD, Esq., was a good 1st for twelve blooms of any Rose, with some very high coloured La France.

Mr. R. W. MILLER was well in front for twelve singles, and for nine ditto in the local classes.

Eight competed for the Ladies' Challenge Cup and National Rose Society's Silver Medal for six distinct Roses, Mr. W. HOOPER winning with excellent blooms, closely followed by G. A. V. SCHOFIELD, Esq., and Mr. R. W. MILLER.

In the nurserymen's class for thirty-six singles seven competed, and the first four were remarkably close. Messrs. HARKNESS & Sons, Bedale and Hitchin, were 1st, Mr. B. R. CANT, Colchester, 2nd, and Messrs. PRIOR & Sons, Colchester, 3rd. There was not a bad flower in these three stands, a d all were very bright and clean.

Mr. G. PRINCE, Oxford, won for twelve Teas and Noisettes; Messrs. PRIOR & Son, and Mr. B. R. CANT following.

Table decorations, bouquets, baskets, sprays, and other designs, were very tasteful, and clearly proved what can be done in this direction with Roses only.

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	Above (+) or below (−) the Mean for the week ending June 30.	ACCUMULATED.			No. of Rainy Days since January 8, 1897.	Total Fall since Jan. 8, 1897.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 8, 1897.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 8, 1897.				
0 1 —	76	0	+ 6	7 1 —	111	18.5	25	30
10 aver	95	0	— 23	+ 12 1 +	101	14.3	28	29
2 1 +	109	0	+ 54	— 78 0 aver	95	11.0	31	32
3 3 +	132	0	+ 107	— 124 3 —	94	11.9	39	35
4 3 +	131	0	+ 63	— 115 4 —	91	13.3	32	33
5 3 +	140	0	+ 136	— 180 1 —	87	14.4	38	37
6 0 aver	101	0	— 9	— 21 0 aver	107	20.3	28	31
7 2 +	120	0	+ 55	— 92 3 —	105	15.4	35	33
8 3 +	134	0	+ 128	— 138 3 —	107	20.9	39	37
9 1 —	96	0	— 36	+ 8 6 +	118	19.8	34	31
10 1 +	121	0	+ 63	— 57 4 +	110	21.1	24	32
* 3 +	137	0	+ 214	— 80 0 ver	115	17.8	46	39

The districts indicated by number in the first column are the following:—

0, Scotland N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; *Channel Islands.

MARKETS.

COVENT GARDEN, JULY 1.

PLANTS IN POT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Heliotropes, dozen	4 0-6 0
Aspidistras, per doz.	12 0-30 0	Hydrangeas, per	dozen ...
— specimen, each	5 0-15 0	dozen ...	9 0-12 0
Calceolarias, dozen	4 0-6 0	Lobelias, per dozen	3 0-4 0
Coleus, per doz.	3 0-6 0	Marguerites, p. doz.	6 0-9 0
Crassula, per plant	2 6-3 0	Mignonette, p. doz.	4 0-6 0
Dracenas, each	1 0-7 6	Musk, per doz.	3 0-6 0
— various, p. doz.	12 0-24 0	Palms, various, ea.	2 0-10 0
Evergreen Shrubs,		— specimens, ea.	10 6-84 0
in variety, doz.	6 0-24 0	Pelargoniums, per	dozen ...
Ferns, small, doz.	1 0-2 0	dozen ...	9 0-12 0
— various, doz.	5 0-12 0	Rhodanthes, dozen	4 0-6 0
Ficus elastica, each	1 0-7 6	Spiraea palmata, per	dozen ...
Foliage plants, doz.	12 0-36 0	dozen ...	9 0-12 0
Fuchsia, per doz.	4 0-6 0	Spiraeas, per doz.	6 0-9 0

BEDDING PLANTS AND ROOTS FOR THE GARDEN in variety coming very good.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, p. 12 blooms	2 0-4 0	Mignonette, per doz. bunches	2 0-4 0
Bouvardias, per bn.	0 4-0 6	Myosotis, or Forget-me-Not, 12 bunch	1 6-3 0
Carnations, pr. doz. blooms	0 9-2 0	Orchids	
— per doz. bun.	4 0-6 0	Cattleya, 12 blms.	9 0-12 0
Corn Daisy, per doz. bunches	1 6-2 0	Odontoglossum crispum, 12 bn.	2 0-4 0
Cornflowers, per doz. bunches	1 6-3 0	Pansies, doz. bun.	1 6-2 6
Eucharis, per dozen	3 0-4 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
Gardenias, per doz. blooms	2 0-4 0	— per 12 sprays	0 4-0 6
Gladiolus, various, per doz. bunches	3 0-6 0	Pyrethrums, 12 bn.	1 6-2 6
Iris, p. doz. bun.	4 0-12 0	Ranunculus, 12 bn.	2 0-3 0
Lilium candidum, per dozen	1 6-2 6	Roses, Tea, per doz.	0 6-1 0
Lilium Harris, per doz. blooms	2 0-4 0	— yellow (Maréchal), per doz.	1 6-4 0
Lily of the Valley, dozen sprays	1 0-2 0	— red, per dozen	0 9-2 0
Maidenhair Fern, per 12 bunches	4 0-8 0	— pink, per doz.	2 0-4 0
Marguerites, per 12 bunches	2 -4 0	— Safrano, p. doz.	1 0-2 0
		Roses, 12 bunches	2 0-4 0
		Stephanotis, dozen sprays	2 0-2 6
		Sweet Sultan, per dozen bunches	3 0-4 0

ORCHID-BLOOM IN VARIETY.

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.			
Cherries, Dukes,	per bush. ...	10 0-12 0	Melons, each ...	1 0-2 0	
— White, p. bush.	6 0-12 0	Nectarines, select,	fruit, per doz.	12 0-15 0	
— Black, p. bush.	7 0-12 0	— Medium, per	doz. ...	6 0-8 0	
Currents, Black,	per half-bushel ...	7 0-9 0	— Seconds, per	doz. ...	3 0-4 0
Figs, per doz. ...	2 0-4 0	Peaches, selected	fruits, per doz.	9 0-15 0	
Grapes, Gros Col-	mar, per lb. ...	—	— Medium, per	doz. ...	4 0-8 0
— Alicante, p. lb.	—	—	— Seconds, p. doz.	2 6-3 0	
— Hamburgs,	selected, per lb.	2 0-2 6	Pine-apples, St. Mi-	chael, each ...	5 0-8 0
— 2nd quality,	per lb. ...	1 0 —	Strawberries, per	peck ...	2 0-2 6
— Muscats, se-	lected, per lb.	2 6-3 0	— per dozen 1 lb.	punnets ...	4 0-6 0
— 2nd quality,	per lb. ...	1 6 —			

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Artichokes, Globe, per doz. ...	1 0 —	Mushrooms (Indoor) per lb. ...	0 8-0 10
Beans, French, per lb. ...	0 8-1 0	Salad, small, per doz. punnets ...	1 6 —
Cucumbers, home-grown, select, per doz. ...	2-0-2 6	Tomatoes, selected, per doz. lb. ...	4 0-5 0
— 2nds, per dozen	1 6-1 6	— Medium, do. ...	3 0-4 0
		— Seconds, do. ...	2-0-2 6

POTATOS.

With a lower tendency, present quotations are as follow:—Jersey Flukes and Kidneys, £9 to £11; St. Malo and Cherbourg, £8 to £9; Home-grown, various, £7 to £12. Old: Dunbars, 80s.; others, 20s to 40s. John Bath, Wellington Street, Covent Garden.

(Markets carried over to p. ix.)

NOTICES TO CORRESPONDENTS.

* * The publication of a large number of communications is unavoidably postponed.

AFFECTED STRAWBERRIES: C. T., Slough. The plants are overrun with the fungus-pest, *Botrytis vulgaris*. Spraying cannot be resorted to at this season with success. Sprinkle straw over the bed, and set it on fire. A month or six weeks after this is done, a crop of new leaves will appear, and then spray with a dilute solution of Bordeaux Mixture, or with a solution of potassium sulphide—1 oz to 3 gallons of water. Repeat spraying in the spring as a preventive until the bloom appears. G. M.

AN OLD-FASHIONED FLAT-ROOFED PINE-STOVE AS CATTLEYA-HOUSE: T. J. L. The house, judging by the effects produced on the plants, does not suit Cattleyas, although Vandas, Dendrobis, Angrecums, Lisochilus, some tropical species of *Cypripedium*, &c., would succeed therein. It is doubtless too hot, even in the summer when no artificial heat is used, requires shade for so many hours during the day when the weather is bright, and is not ventilated in accordance with the requirements of species coming from mountainous regions in the tropics or subtropical countries. Could you not raise the roof at the back, giving it a sharper slope, and adding at the same time to the cubical contents of the house, and provide ventilators near the ground-level, and so placed that the cool air impinged on the hot water pipes—a very necessary arrangement in the cooler months?

Books: *Hortus*. Schlich's *Manual of Forestry*, published in five vols. by Messrs. Bradbury, Agnew & Co., 8, 9, 10, Bouverie Street, London, E.C. No

periodical appearing weekly or monthly exists which deals with practical forestry. There is however a journal called *Timber*, and another *The Timber Trades Journal*. The Scottish Arboricultural Association publishes its proceedings.

FRUITS OF STRAWBERRY ROYAL SOVEREIGN: A. Boleman. These enormous, wedge-shaped fruits, which had a weight of 1 lb. 10 oz., were as magnificent examples of this excellent early variety as we have ever seen. For ordinary mortals we, however, like the smaller fruits, which are conical in shape, like one of its parents, viz., Sir Joseph Paxton.

GLOXINIAS: R. B. J., Ireland. The disease is caused by using "hard water." This causes the formation of an excess of oxalic acid, which injures the tissues; also combines with the lime present in the hard water to form crystals of oxalate of lime, which destroys the protoplasm of the cells. Rain water, or "soft water" should alone be used for watering. G. M.

HARTLEY'S ROUGH PLATE-GLASS FOR VINERY ROOF: Reader. The Vine in this country requires all the direct sunlight possible to mature its wood; and fruit should not be put under "rough plate," but under perfectly colourless large panes of strong glass, say 21 oz. to the foot square, without flaws or air bubbles. The Peach or Tomatos might succeed under rough plate.

LARCH: J. & Co. The insect destroying the Larch is the too-common Pine-weevil (*Hylobius abietis*). Hand-picking is probably the best remedy if the plantations are not too extensive. The surface of the ground below the young trees should be kept perfectly clear of anything that can afford shelter to the beetles. On the other hand, artificial shelter in the way of strips of bark, &c., may be placed beneath the trees, and the beetles that collect under these shelters should be destroyed daily. The application of quicklime, diluted paraffin, &c., on the ground beneath the trees, or as a wash to the trunks, has been recommended. The larvae live beneath the bark, and prefer recently dead wood, so that chips, stumps, dead branches, &c., should be carefully destroyed. The insect occasions great damage in this country, but still slight as compared with the destruction caused by it in continental forests. R. McL.

LILium BULB: C. D., Aberystwyth. The bulbs are swarming with the Eucharis bulb-mite, figured and described in the *Gardeners' Chronicle*, March 22, 1890.

MELONS: F. J. C. L. Your Melon is affected by a disease known as anthracnose, which is caused by a fungus called *Gloeosporium*. In the case of the fruit sent, there is a large discoloured and softened spot, which is surrounded by a darker ring. At present the fungus is not fully developed in the centre of this spot, and the spores are not formed. When once the fruit becomes attacked, it is hopeless to attempt to save it, for if the fungus is destroyed by applying a solution, the spot will remain. It is better to remove a diseased fruit as soon as the spot appears, and thus do all that is possible to prevent its spreading. M. C. C.

MUSHROOM-BEDS OUT-OF-DOORS: R. J. S. April was too late to make beds in the open; and, unless you have some underground-cellar, with a temperature of not more than 60°, you will not succeed. Fly-blown Mushrooms are only found in warm weather outside, or in over warm Mushroom-houses.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—Kent. *Euphorbia mamillaris*.—D. W., Glasgow. The two *Rubus* are either *R. nutkanus* (white flowers), or *R. odoratus* (purple flowers), or there may be specimens of both. The other plant is *Leptospermum flavescens*.—G. J. R. *Thuja orientalis* var. *filifera*.—R. T. W. A remarkably fine form of *Cattleya Mendeli*, the white tube to the lip and fringed front rendering it very conspicuous.—Constant Reader. The petals had mostly fallen, but in any case we cannot undertake to name varieties of Roses. Send them to some large grower.—R. W. P. 1, *Cnicus pratensis* (Meadow plume Thistle); 2, *Galeopsis Tetrahit*; 3, send when in flower; 4, *Monarda didyma*; 5, *Erigeron* sp.; 6, *Onosma taurica*; 7, *Polystichum angulare*.—E. M. 1, *Abutilon Couronne d'Or*; 2, A. Golden Gem; the Orchid is *Gongora galeata*.—H. G. The yellow flower is *Asphodelus luteus*. The garden Carnation we are unable to name.—H. P. 1,

Hieracium aurantiacum; 2, *Helianthemum Rose*; 3, *Buddleia globosa*.—G. D. 1, Ver probably a garden hybrid; 2, *Polypodium cum*; 3, *Galea officinalis*; 4, *Jasminum lulum*; 5, *Pyrethrum*; 6, *Ornithogalum lact*; 7, *Astrantia major*; 8, *Campanula ranunculoid*

ORCHID-BLOOMS: H. R. In the case of the *O. glossum crispum* and *Pescatorei*, the blooms are less broad in the sepals and petals. *Orchidiophiles* now prefer. The spray of *O. crispum* is of good length, and indicates a vigorous plant; but being newly imported, its vigour lessens under cultivation. You must wait. *O. Pescatorei* spray is rather weak, but the plants are normal, and this plant may improve. Bloom of *Cypripedium hirsutissimum* is a one.

ORCHIDS FAILING: L. P. The cause of the failure of orchids in the manner shown by the specimen has never been definitely settled. Some wrong in the cultivation may probably be the cause.

STRAWBERRIES: A. H. H. The fruits arrived in condition, and have the appearance of having been attacked by insects or vermin. Possibly the beetles mentioned in reply to A. G.

STRAWBERRIES DESTROYED BY BEETLES: A. G. The beetles are *Harpalus ruficornis* (a flat black beetle nearly half an inch long, with red legs and antennae belonging to the group of "ground beetles" (*Geophaga*), the members of which are notoriously voracious, but this particular species has only been developed an undoubted taste for ripe strawberries. It is universally common, and it is probable that its presence in destructive numbers in Strawberry grounds is connected with the practice of placing round the plants to prevent the fruit touching the earth. This litter harbour beetles; they lie concealed under it during the day and sallies forth at night to attack the fruit, therefore, the litter was turned over and exposed in the daytime, it is probable that thousands of beetles might be destroyed. As a preventive might be possible to saturate the litter with a substance noxious to the insects, but not liable to impart flavour to the fruit. It is a subject for suggestion or experiment by those interested. The beetle larvae live in the ground, and as strawberries are a standing crop, it is obvious that the number of beetles in a given field is liable to vastly increase year by year, unless they can in some way be checked. R. McL.

TOMATO: F. F. P. The injury to the fruits is a mechanical one, but due to a fungus known as *Cladosporium*, many times figured in these pages. Remove and burn every fruit that is attacked as soon as observed.

TOMATO FOLIAGE ATTACKED BY FUNGUS: J. E. The fungus is similar to the *Peronospora infestans* the Potato. The mycelium lives inside the plant, especially on its leaves, therefore sulphur Bordeaux Mixture are of little use against mycelium, but will kill the conidiospores, preventing the germination of conidia or oospores that may alight on the leaves. In so far as you use either with success. The following is a formula for making the latter:—6 lb. copper plate in warm water, placing this in a capable of holding about 44 gallons; in another vessel slake 4 lb. fresh-burned lime, making to a creamy white-wash with water; strain the water through coarse canvas into the barrel of sulphur solution; fill up with water, stir well, and the mixture is ready for use. For Tomatoes growing under it may be somewhat diluted. Diseased portions of the plants should be cut off and burnt before the mixture. As a precautionary measure, it may be used on quite healthy plants.

VINES ATTACKED BY FUNGUS: X. The disease caused by a well-known fungus—*Penicillium didymum*. Spray at intervals with dilute Carbolic Acid or potassium sulphide, 1 oz. to 3 gallons of water. This will check its spread. G. M.

COMMUNICATIONS RECEIVED:—R. Anderson.—E. W. Sons.—H. K.—G. H.—J. L.—S. A.—J. Weather Sander & Co.—G. W. S.—H. L.—M. C. C.—E. C. Smith.—F. W.—F. K.—C. H. P.—P. Henschel.—T. E. Webb.—H. A. C.—F. C. J.—J. E.—H. M.—Hurst.—E. R. & Sons, Ltd.—W. Elphinstone.—D. T. F.—C. R. Dean.—G. G.—J. C.—J. H. G.—H. T.—G. W.—J. W. B.—P. T.—E. M.—J. Veitch & Sons.—A. P.—E. M.—East Norfolk.—A. H.—S. W.

PHOTOGRAPH RECEIVED WITH THANKS from E. U. K. & Son, Haarlem.



THE Gardeners' Chronicle.

SATURDAY, JULY 10, 1897.

PLANTS OF THE VICTORIAN ERA. BRITISH FERNS.

ALTHOUGH, unfortunately, our British Ferns, in their developed varieties, do not for the moment find due appreciation at the hands of the general public, I trust I may be permitted, with an eye to the future, to include them in the list of plants which are now engaging attention in your columns under the above heading. If there be any range of decorative foliage plants which the patriotic Briton should be especially proud of, it is certainly this one, for no other, to my knowledge, is so peculiarly a native product, nor so particularly interesting in the fact that many of the most beautiful and charming forms have originated spontaneously in all their perfection in our native lanes, woods, glens, and similar spots in which our little islands are so rich.

Where is there another tribe of plants of which hundreds of distinct and beautiful varieties (I say nothing of the merely curious ones) can be brought together, and the honour and glory of their production be imputed in their entirety either to British environment or British selection? Take the pedigree of any other, and even if we owe the marvellous developments we now delight in to British care and culture, the starting plant (or plants, where hybridisation plays its important part), is or are usually exotic; while, in the majority of cases, there has been keen competition with the foreigner, fresh developments have been raised abroad and imported, and hence the merit is more or less cosmopolitan in every instance, and none of them can be claimed as purely and exclusively native. With our British Ferns, however, this is absolutely the case, for it is a curious and remarkable fact that although between thirty and forty years ago, these varieties were fashionable in England, and the number of native Fern-hunters largely increased as their capacity for spontaneous variation under natural conditions became more widely known, the fancy seems to have been almost exclusively confined to Great Britain, and although the species indigenous here have all a much wider range, being found in profusion in many other countries, the varieties which have been found abroad and imported can be counted on the fingers of one hand; and, in fact, the writer only knows of four. In this particular connection, indeed, the Queen's reign has practically witnessed the birth as well as the development of any true appreciation or knowledge of the varietal forms; and, in point of fact, of the normal as well, since at the time of her accession the whole process of reproduction of Ferns was a dark mystery, destined, however, to be cleared up seven years later, when Naegeli and Suminski announced their discoveries to the world.

Very early in the reign however, British Ferns began to be popular, and we find in 1844, Mr. Newman bringing out his capably-executed work, *A History of British Ferns*, in which the various species are well depicted and described, though the nomenclature varies considerably from that adopted to-day. But here, as in all the earlier books, the capacity for

variation is practically ignored, and Mr. Newman only figures four abnormal forms, viz., *Polypodium vul. cambrium* and *bifidum*, the incised form of *Asplenium trichomanes*, and a multifid variety (a very fine one, by the way) of *Athyrium filix-fœmina*, a counterpart of which he actually found himself in Co. Wicklow, and yet labels his picture "a monstrosity."

Mr. Newman devotes considerable space to detailing some minor differences in form of *Athyrium* and other species, which were then discussed as specific ones, botanists being at variance thereon; but there is not a word of allusion to the now well-known plumose and other crested varieties, of which we must assume his entire ignorance. Even the Hart's-tongue, though one of the figures has a multifid frond, is apparently unknown to him in any of its crisped or thoroughly tasselled shapes, and *Polystichum angulare* is only stated to have occasionally decomposite pinnules. It is fairly evident, therefore, that at this period there existed no collections of varieties, and that the wealth of forms scattered about the country was not in the least suspected. In 1863 the case was obviously different, since under that date a catalogue lies before me, issued by Mr. R. Sim, of Foots Cray, and in this we find a list of 320 British Ferns and varieties representing (deducting about forty specific normal forms) some 280 abnormal ones. As these are very fully described, an opportunity is thereby afforded of judging their merits; though, truth to tell, many of them are recommended because they are curious rather than beautiful, and a very large percentage would now be found with difficulty in up-to-date collections, as, owing to their defective or merely sub-varietal character, they have been ousted by better ones. Moore's *Nature-Printed British Ferns*, published previously in 1859, names, figures, and describes presumably the best extant and among those splendidly figured therein are some very fine things indeed, demonstrating that the cult was fairly launched and appreciated. Up to this time, however, the number of really good finds was comparatively small, and as the public taste seemed equally satisfied with eccentricities as with symmetrically beautiful varieties, selective culture on stringent lines of improvement was little attended to, and, as a result, a plethora of imperfect forms was thrown upon the market, which doubtless contributed ere long to surfeit and eventual neglect. A number of enthusiastic cultivators, however, not only formed very fine collections at this time, but continued to extend them, and began to turn their attention to systematic raising by spores from the best, with definite views as to improvements of type; and later on, when the reproductive process was thoroughly grasped, so too was the possibility of crossing and hybridising, whereby a large number of very interesting new forms were eventually raised. The pioneers in this direction were Col. A. M. Jones, Dr. E. F. Fox, Mr. E. J. Lowe, whose splendidly illustrated volumes, published in the seventies, *Ferns, British and Exotic*, *Our Native Ferns*, and *New and Rare Ferns*, must not be ignored in this connection; Mr. Clapham, Mr. Padley, and Mr. Carbonell; while many new finds were added by the careful hunting of Messrs. G. B. Wollaston, J. M. Barnes, Dr. Wills, J. Moly, the Stansfields, W. H. Phillips, and many others. By the joint efforts of finder and raiser (often combined in one and the same person), the number of known varieties became so great, that strict selection began to be felt as a necessity; the result being an immense improvement in type, fully as great in its scope, and exemplifying fully as much development when compared with the normal, as any other branch of horticulture can show during the Victorian Era. Twenty years ago only, the Kew collection of British Ferns was very small, and varieties were scientifically ignored. Thanks, however, to the persistent efforts of some of the pioneers above named, a fair collection was presented and suitably accommodated in the national gardens at Kew; and Mr. Carbonell dying shortly after, the garden was suddenly enriched by the bequest of his splendid collection to the nation, so that now some thousands of plants, representing hundreds of the best forms, fittingly attest the capacity of our home Ferns to decorate our parks and

gardens, slow though the lesson may be in the learning.

So far as regards numerical increase, some idea of this may be formed from Mr. E. J. Lowe's list, dated 1891, in which the forms actually described number 1,859, thus:—

<i>Pteris aquilina</i> ...	17	<i>Polystichum angulare</i> ...	304
<i>Adiantum cap. veneris</i> ...	34	<i>Polystichum aculeatum</i> ...	84
<i>Asplenium ad. nigrand</i> ...		<i>Lastrea filix-mas</i> and	
other <i>Asplenium</i> ...	125	other <i>Lastrea</i> ...	143
<i>Athyrium filix-fœmina</i> ...	313	<i>Polypodium vulgare</i> ...	75
<i>Scelopendrium vulgare</i> ...	450	Other species ...	274

of which no fewer than 1,119 are wild finds, without taking into consideration numerous forms repeatedly found.

The main thing, however, from the horticultural point of view, is not mere number but quality, and the advance in this direction of late years has been immense, as was evidenced, indeed, at the Royal Horticultural Society's Fern conferences and exhibitions of 1890 and 1892, since when some very fine additions have been made. The most marked advances have been achieved in the plumose sections of *Athyrium f. fœmina* and *Polystichum angulare*, some specimens of which have been developed into quinquepinnate forms of extreme beauty. The crispum Hart's-tongues have gone a step farther than frilling, and developed finely-cut fringes as well; while the crested Male Fern has yielded some unexpectedly beautiful varieties, Cropper's fimbriate forms, to wit, being marvels of delicate cutting. The cristate varieties have also progressed, and the union of this form of variation with that of the plumose has yielded some splendid combinations, *A. f. f. superbum pericristatum* being actually tasselled to the fourth degree. Mr. E. J. Lowe has raised some very remarkable Hart's-tongues, wherein the effects of crossing are multiform in the extreme; and finally, in this special connection of crossing, Mr. Schneider has demonstrated the practicability of imparting the varietal characters of our British species to allied foreign ones, his *Polypodium Schneideri*, already described in these columns, forming a triumphant demonstration, to say nothing of other successes on like lines. This, a comparatively recent feat, opens up wide possibilities for the future, since indubitably many exotics would not only be rendered more ornamental by the infusion of varietal character, but would naturally benefit constitutionally in addition.

We have therefore seen that the past six decades embrace to all intents and purposes the entire discovery of the normal life history of Ferns in general, and also the discovery and development of all our existing varietal forms, save some half-a-dozen or so. If we compare this advance with that of exotics we shall find, so far as actually discovered varieties are concerned, that any one of our prolific species has sported more than all the foreigners put together, the exotic Fern additions being mainly freshly introduced specific forms.

Of recent years, our British varieties have acquired greater interest than of old in the eyes of the scientific botanist, owing to the fact that the reproductive functions have also been found subject to variation and modification in very unexpected ways. A new varietal section has thus been found to exist, in which the fronds bear prothalli, and for the sake of future comparison this now embraces *A. f. f. Clarissima*, Jones; *A. f. f. Clarissima*, Bolton; *Scol. v. Drummondia*, Scol. v. (*aposporum*) Lowe; *Polystichum angulare* var. *pulcherrimum* (Padley, Wills, Moly), *Lastrea pseudo-mas cristata* (seedling), and *L. p. m. Cropperi* (D.), in all of which the life cycle is shortened by the elision of the spore, and in some cases, especially the last-named, by the elimination of sexual action altogether, the prothallus budding out from the frond, and the frond again budding out from the prothallus. *Chas. T. Drury, F.L.S., F.R.H.S.*

FLOWERS.

(Continued from p. 424, vol. xxi.)

CANNA.—The Canna has made a surprising advance in late years. Sixty years ago three species were in cultivation—*aurantiaca*, *indica*, and *iridifolia*. Its popularity dates almost from the time when John Gibson used it

with such excellent effect in his sub-tropical garden in Battersea Park. There were but few dwarf-growing varieties then, but continental raisers were not slow to see the possibilities of the Canna, and the improvements made during the last twenty years, and still in course of being made, are simply marvellous. M. Crozy has done wonders, and others, such as Messrs. Cannell and George Paul, are following the lead so given. The leading varieties of the present day are dwarf and strong in growth, the individual flowers large in size, and whether self-coloured, two or three-coloured, bordered or spotted, are superb.

CARNATIONS, PICOTEES, AND PINKS.

When the Queen came to the Throne there was an abundance of the bizarred and flaked Carnations, but not nearly so many Picotees—a fact leading to the supposition that the Picotee was a later development in time. From that time onward, the production of new varieties has gone on unceasingly; but the great impulse was given to its cultivation and improvement when, in 1851, the National Carnation and Picotee Society was formed at an exhibition held at Slough. Raisers innumerable added each their quota; the late Mr. E. S. Dodwell began to cultivate and raise seedlings at a time almost coeval with the accession of Her Majesty. Two varieties in particular—C. B. Admiral Curzon and P.P.B. Sarah Payne—have been grown almost the whole time the Queen has occupied the throne. The labours of Mr. Gyles, Mr. Douglas, and others, gave a new lease of life to the yellow-ground varieties; while the selfs and fancies have become a formidable section in point of numbers. Mr. Martin R. Smith has done very much during the last ten years to popularise the Carnation; he is the most prolific producer of new varieties at the present day.

The winter-flowering varieties have been improved quite as much as those of the summer-flowering types; and there is scarcely a period of the year when the Carnation is not in bloom. The Malmaison type has been considerably increased; many of the later-produced summer-flowering varieties rival the Malmaison in point of size. The new annual Margaret Carnations have not made the headway expected—the older types dominate. A garden without Carnations is unusual. As a cut flower it is almost unrivalled in our markets.

Its relative, the Pink, has declined as a florist's or exhibition flower. A goodly number of varieties were cultivated in 1837; the petals were fimbriated, wanting in substance, and the lacing defective. In 1848, Morris was a successful raiser, so was Young of Twyford, Dr. Maclean, Looker, and others; later in time, the Rev. C. Fellowes and James Thurstan carried on the work. As border flowers, the Pinks are held in high esteem, and the varieties increase rapidly. (See Report of the Carnation Conference, July 22, 1890, *Journal of the Royal Horticultural Society*.)

CHRYSANTHEMUM.

No flower has of late years made such remarkable strides in popular estimation as the Chrysanthemum. When the Queen came to the throne probably nearly one hundred varieties were in cultivation, but no classification existed, though the flowers were beginning to be publicly exhibited. Little was done in the direction of raising seedlings until 1836; but when Mr. John Salter went to Versailles late in the thirties [see note by R. Fortune in Mr. W. B. Hemsley's paper, published in the *Gardeners'*

Chronicle, vol. vi., 1889, pp. 521, 555, and 585. Ed.], he obtained all the best seedlings—those raised by Chevalier, Bernet of Toulouse, the first raiser of seedlings—and set to work producing new varieties, with what result is well known. The first genuine English seedlings were raised in Norfolk about 1835 by Short and Mr. Freestone. The first public show of cut-blossoms was held at Stoke Newington in 1846. In this year Robert Fortune brought what he called the Ohusan Daisy from China, which was the progenitor of the race of Pompon Chrysanthemums. In 1862 came the Japanese

CYCLAMEN.

Very remarkable also has been the progress made with the Cyclamen during the past sixty years. It was not until the forties that any serious attempts were made to improve the well-known *C. latifolium* (commonly but erroneously called persicum), by means of seeds. The type itself and the varieties obtained from it were regarded as early spring-flowering plants, and shy seeders. Fragrant types were announced in 1844. Messrs. E. G. Henderson & Son, of the St. John's Wood Nurseries, were among the first to add to the varieties, and the



FIG. 3.—*DIERVILLA SESSILIFOLIA*: FLOWERS YELLOW. (SEE P. 17.)

varieties, introduced by Fortune, and since, Red Dragon, Leopard, Jas. Salter, Hero of Magdala, and Garnet, all English varieties, were raised, wonders have been wrought in relation to its development; and had it not been for the introduction of this race, the Chrysanthemum would probably never have become so popular as is the case to-day. In plant-houses, in our markets, and at exhibitions of the flower, the Japanese type dominates, and no other flower has such a wide circle of admirers. Chrysanthemum societies are numerous, and exhibitions take place in all parts of the world where the English-speaking races abound.

possibilities of improvement once recognised, many undertook its culture. It is, however, only within the last twenty-five years that much marked improvement has taken place; the colours have been extended and deepened beyond all expectation, and the giant type of flower has been evolved. [See fig. 65, in vol. xxi., March 27, 1897.] The Cyclamen is now recognised as a late autumn and winter, as well as a spring-flowering plant. It seeds readily; it has become much more floriferous than formerly, and improved methods of culture have been made known. It can now be had in bloom from October until April and May.

DAHLIAS.

In 1837 many varieties of Dahlias were in cultivation. The *Dahlia Register*, published in 1836, gives a number of coloured illustrations of leading varieties. The fancy type was also existing, though apparently not then formed into a distinct section. The Pompon, or as it was originally designated, the Liliputian Dahlia, though having originated in Germany at the beginning of the present century, was not much cultivated in this country until the early part of the Queen's reign; the single form was re-introduced in 1880, and with it the Mexican

DELPHINIUM.

Sixty years ago the Delphinium was represented in gardens by *elatum*, *grandiflorum*, and *tricornis*, and some seedling varieties of each. We probably owe to the two first the early improvements seen in this popular perennial; and when, in 1840, the variety *Barlowi* appeared, and the rich blue *formosum* came from the East later, both were utilised for cross fertilisation, and their parentage is seen in the magnificent varieties of a very varied character produced in the present day. *Nudicaule*, with its pale red flowers, came from California in



FIG. 4.—ESCALLONIA LANGLEYENSIS. (SEE P. 17.)

species, *Juarezi* or *Cactus*. The last-named, somewhat frowned upon at first, worked a revolution in the estimate in which the Dahlia is held, and having since its introduction become considerably extended in its varieties and improved, it is now more widely cultivated perhaps than any other section. The single type became very popular for a time, but has now sensibly declined in public estimation. The Pompon type has undergone extensive improvement, and bids fair to become the most useful race for garden decoration. A single form of the *Cactus* type is not yet so popular as it may in course of time become. [See articles upon the history of the Dahlia, in *Gard. Chron.*, 1889, vol. xii., pp. 437, 524, and 557; also report of Dahlia Conference, in the *Journal of the Royal Horticultural Society*, vol. xiii., 1891.]

1869; and later, from the same country, *D. cardinale*. The Delphiniums are magnificent border plants, and deservedly popular.

FUCHSIA.

This genus in 1837 was represented by a few species, such as *serratifolia*, *macrostemma* and varieties of it, *coccinea*, *microphylla*, *fulgens*, and one or two others; but the value of raising seedlings had begun to be recognised. Messrs. Lane & Son of Berkhamsted, and Saltmarsh of Chelmsford, were seedling raisers among others at the time of the Queen's accession. In the early forties the pollen of *fulgens* was much used to secure hybrids. In 1839 *corymbiflora* was introduced from Peru, and in 1842 Mr. T. Cripps, of Tunbridge Wells, distributed, at a guinea a plant, the once popular *Venus Victrix*.

Raisers were early at work; Mr. W. H. Storey of Newton Abbot was a pioneer in the work, also Mr. E. Banks of Deal. The first white-corollaed variety came from France about the middle of the fifties, and a double form appeared soon after. New varieties are still raised, especially by Mr. J. Lye; but the *Fuchsia*, though yet extensively grown, does not command the attention it once did. Very fine exhibition specimens are still grown in the North and West of England.

GLOXINIA.

The Gloxinia during the latter half of the Queen's reign has shown a remarkable development. *Maculata* and *speciosa* were grown at the Queen's accession, one or two other species were imported in the forties, and seedlings soon began to show considerable variation. The earlier varieties bore irregular pendent corollas, and somewhat flattened; by-and-by, circular, erect, regular forms were originated, and now scarcely a pendent-flowered form is to be found in collections. It has also become quite a greenhouse annual, and seeds sown in January and up to March produce plants which, under proper management, bloom in four and five months. The collections now seen at the Temple and other large flower shows are superb, and appear almost incapable of further improvement.

HOLLYHOCK.

The Hollyhock was undergoing improvement at the time of the accession of the Queen, and Charles Baroni, of Saffron Walden, with others, was engaged in transforming it from a single to a double form. It was still more improved by Clarke, Paul, Chater, Roake, Parsons, and others, and it became a favourite exhibition flower with the florist. Some few years ago it was affected by a fungus, which, settling upon the leaves, destroyed the plants, and its successful culture was rendered difficult in consequence, many fine varieties becoming utterly lost. This disease still affects collections, but efforts are being put forth towards cultivating this plant more largely than within the past ten years, and raisers are at work obtaining new varieties.

LOBELIA CARDINALIS.

The American *Lobelia cardinalis*, and the Cape of Good Hope *L. erinus*, have both been turned to good account during the reign of the Queen, and the improvements made with both enrich our flower gardens during the summer months.

LILIES.

The genus *Lilium* has had important additions made to it. Sixty years ago some most useful species, such as *candidum*, *Martagon*, *tigrinum*, *croceum*, &c., embellished our gardens. *L. speciosum*, which has proved one of the most useful, had only recently come to our shores. The stately *giganteum* was imported in 1852. *Auratum* and *longiflorum* came in 1862—a fine form of the latter, known as *Harrisii*, is cultivated in very large quantities, as it forces well—and *pardalinum* in 1875. *Auratum* has produced many varieties, and it is a very handsome species, whether grown under glass or in the open border.

SWEET PEAS.

Since, in 1877, Mr. Henry Eckford took in hand the Sweet Pea and cross-fertilised it with a view of extending and improving the few varieties then in cultivation, there has been a most remarkable advance. It is a singular fact that the old types of Sweet Peas, the white

scarlet, purple, Painted Lady, and one or two striped varieties were in cultivation in this country for nearly two centuries before any systematic attempt was made to cross them. Even up to the time when Mr. Eckford commenced his great work, the few varieties which had been added to the old ones, viz., Butterfly, Crown Princess of Prussia, Violet Queen, and one or two others, had mainly originated as seedling variations. But once new varieties were obtained, the work of development has gone forward, and up to this time nearly one hundred varieties have been added, some of the American, as well as home production, are characterised by charming tints, which at one time were thought almost impossible in the Sweet Pea, especially tints of yellow, apricot, blue, mauve, salmon, &c. In the white and pink Cupids, we get diminutive types that are distinctly novel and useful. There may be a good deal of sameness of character about some of the newer sorts, but they are all very attractive, and they are in great request for cutting and all decorative purposes. The time has, however, come when only new varieties, characterised by undoubted distinctness of character, should be distributed.

PELARGONIUM.

The Pelargonium will always be grown, but for varying purposes, according to the tastes of the time. In 1837 Mr. Whomes, at that time gardener to E. Foster, Esq., Clewer, near Windsor, with Messrs. Gaines, Beck, Cook, and others, were the leading raisers of seedlings; and a little later, Mr. G. W. Hoyle, of Reading, followed on the same lines; while Ambrose, Gaines, and others were improving the fancy type. Both sections were popular exhibition plants for many years. The spotted section appeared about forty years ago; a number of very fine varieties were raised on the Continent, and gradually the florist's type gave way before the spotted or decorative class, and the varieties are now extensively grown for market and general decorative purposes, as also for exhibition. The charming fancy varieties, so free of bloom, and generally delicate in tint, require special culture, and this operated to restrict their cultivation. The appearance of a variegated-leaved variety in 1848, under the name of Flower of the Day, called attention to this section; Golden Chain, a golden-edged variety, came a little later. About 1857, Mrs. Pollock appeared, followed by many varieties of tricolors, both silver and golden. Meanwhile, the zonal section was also being greatly improved, and the names of Pearson and Cannell will always be associated with some of the best work of this character. During the last thirty years, the Ivy-leaved section has been considerably developed, fine double and single varieties having been obtained, more largely abroad than at home, and they prove of great value for house decoration, bedding and basket purposes.

PETUNIAS.

Except for bedding purposes, the Petunia has ceased to be greatly grown. It is cultivated for market purposes, but the giving of names to varieties has ceased, except in the case of something of special character. Flowers of large size now rule in the place of the smaller and more symmetrical blossoms of a quarter of a century ago. Those who remember Shrubland Pet, and the Countess of Ellesmere, and Annie Salter, of forty years since, can realise how much the flowers have grown in size; but large flowers are generally associated with a coarse habit of growth. [See figs. 159, 160,

and 161, in the *Gardeners' Chronicle* for June 29, 1897.]

PANSIES.

The show or English Pansy, which Thompson, Hale, and others were improving at the time of the accession of the Queen, is still much grown in Scotland and the North of England, and new varieties are being raised annually; but it has practically stood still during the past twenty years. The introduction of the Belgian or fancy varieties by Mr. W. Dean in 1859-60, with their larger and finely-marked flowers and more vigorous growth, was gladly welcomed, and this section is now largely cultivated, almost to the exclusion of the English varieties, and they appear in most gardens. The northern florists have now taken the lead in their cultivation, and raise a considerable number of new varieties annually.

"VIOLA."

The "Viola" has come to the fore of late years, and is now extensively used for bedding purposes. The improvement commenced some forty years ago, *V. lutea* and other species being employed to produce seedlings; then *V. cornuta* and its white variety came prominently into notice as bedding-plants, when the ribbon-borders prevailed in most gardens. A number of raisers took the flower in hand, and there is now an enormous number of varieties which are very valuable in the flower garden; colours, and combinations of colours, unimagined in 1860, have been obtained. The Viola is also employed as an exhibition-subject, being shown in sprays.

CHINESE PRIMROSE.

Those who remember the Chinese Primrose of 1850, and can mentally compare it with the highest productions of the present day, will realise that its improvement has been astonishing. The two sole colours of the former period—the purple and the white—are multiplied tenfold on corollas of large size, substance, and handsomely fringed margins. Even a shade of blue has been developed, and semi-double and double flowers in abundance. It is a most popular subject, largely cultivated for market, and grown for blooming from October until May. But no double variety yet raised has equalled the old double white; and for cutting purposes, this is still an invaluable variety. The hardy and half-hardy species have been reinforced during the past sixty years by the introduction of several, the most notable being *P. denticulata*, *P. Sieboldi* (of which there are now many beautiful varieties), *P. verticillata*, *P. japonica*, *P. obconica* and *P. floribunda*, the three last-named requiring greenhouse culture. [See report of Primula Conference in the *Journal of the Royal Horticultural Society*, vol. vii., No. 2, published June 30, 1886. Also *Gardeners' Chronicle*, January 26, 1889, p. 115; November 15, 1890, p. 564; and January 2, 1892, pp. 12 and 13. Also *Journal of the Royal Horticultural Society*, March, 1891, vol. xiii., p. 99.]

POLYANTHUS.

The old Gold-laced Polyanthus has lost much of its former notoriety, but *P. elatior* is now represented by fancy or giant Polyanthus of great beauty and variety, and they are much employed for spring gardening. The common Primrose has been improved by the raising of varieties of many shades of colour, from white to maroon; and Mr. G. F. Wilson has been instrumental in developing distinct shades of blue. The double Primroses have been added

to, but in nothing that surpasses some of the old types grown for many years, particularly the crimson, yellow, white and lilac.

RHODODENDRON.

The hardy Rhododendron is still a universal favourite; with its improvement may be associated the names of Waterer, Standish, and Noble. Since the Queen ascended the throne marvellous developments have occurred, and the rich spottings found on the upper portions of the corollas of some of the varieties make them doubly attractive.

STREPTOCARPUS.

Wonders have been accomplished with the Streptocarpus. It is remarkable that *S. Rexii* should have been in cultivation so long before the possibilities of improvement in the flower suggested themselves. Once commenced, its improvement went forward by leaps and bounds, and beautiful hybrids were obtained by Mr. Watson and others. Then by crossing these with some of the newly-introduced South African species, further new and distinct forms have resulted, and the range of colour has been greatly extended. The possibilities of further developments appear to be almost unlimited.

TROPÆOLUM, VERBENA, ETC.

The Tropæolum and the Verbena no longer occupy the position of florists' flowers. The dwarf annual types of the former have had several additions made to them, and they are useful summer bedding plants. Those who have known the Verbena since Robinson's Scarlet Defiance made such a stir in 1848, and saw the improvements made by Barker, Smith, Edmonds, Perry, Eckford, and others, may regret that only common forms find a place in our gardens now, but it is no longer regarded for other than bedding purposes. Phlox Drummondii has taken its place, and is now largely employed for bedding purposes.

The Antirrhinum, Pentstemon, Pyrethrum roseum, Pæony, Sweet Pea, summer and winter Stocks, with the Aster, are all popular, greatly improved, and widely grown.

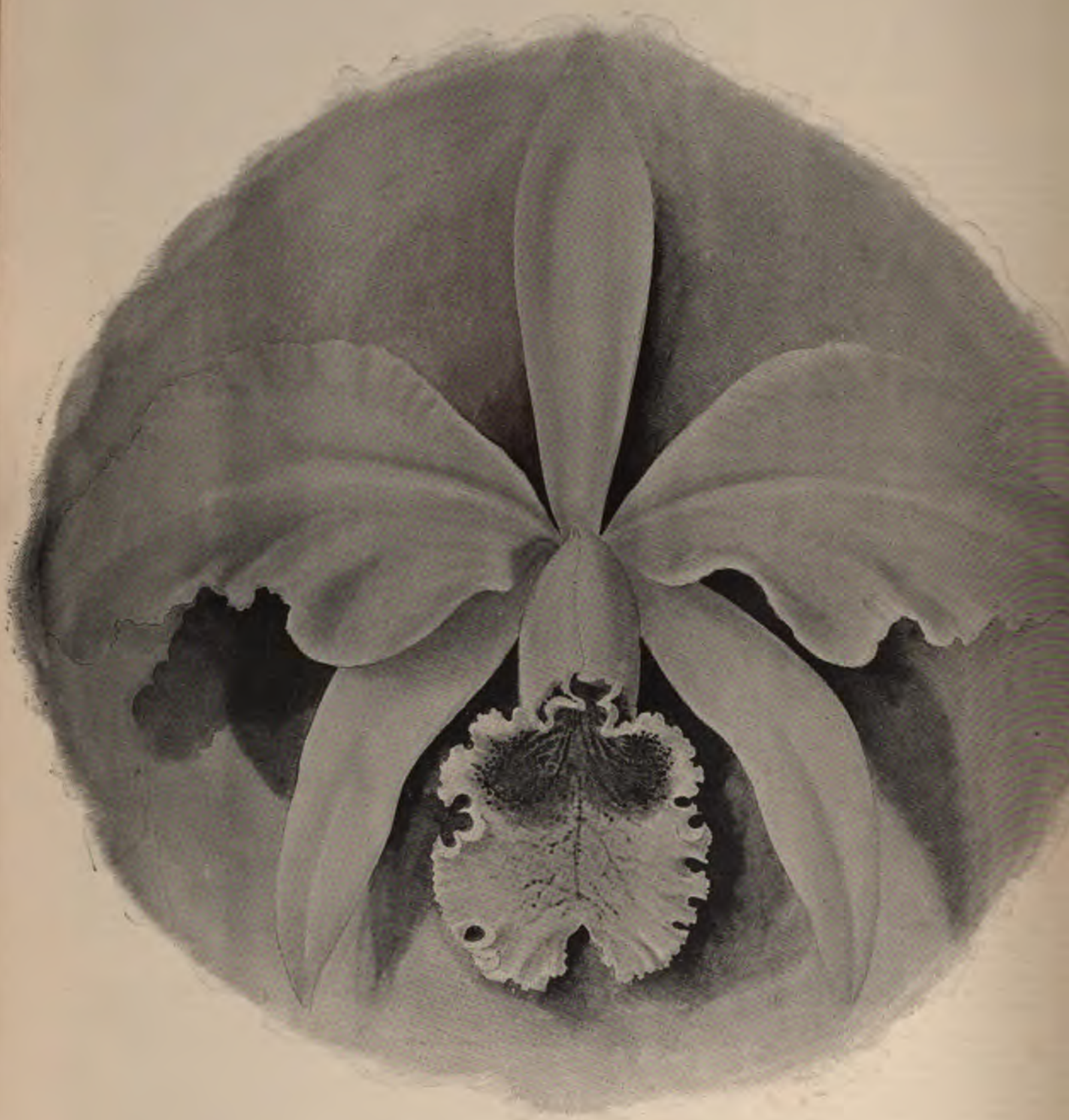
The horticulturist can look back over the sixty years of the Queen's reign and take pride in the survey; and he can look forward with hope and confidence to the future, feeling sure that there is no limit to developments in the vegetable kingdom.

NEW OR NOTEWORTHY PLANTS.

EPIDENDRUM × RADICO-VITELLINUM (RADICANS ♂, VITELLINUM MAJUS ♀), new gard. hybrid.

IN this remarkable hybrid, raised by Messrs. James Veitch & Sons, Ltd., we have another remarkable evidence of the strong individuality of the male parent, as shown in the illustration of their *Epicattleya* × *matutina* in the *Gardeners' Chronicle*, April 10, 1897, p. 233, and which, in a general way, will give a good idea both of the plant under notice and its flowers, apart from the peculiarities here noted.

In *Epidendrum* × *radico-vitellinum*, as in *Epicattleya* × *matutina*, the *Epidendrum radicans* imparted its slender growth, root-bearing stems, and narrow alternate leaves on the offspring, the evidence of the mother-plant being confined to imparting a softer tint of green, and a slightly glaucous hue to the leaves and stems, the latter showing tendency to be slightly enlarged at the nodes. The flowers, which are borne on a perfectly erect stem some 6 inches in length, have slender, ribbed pedicels 1½ inch in length, yellow, tinged with green. The perianth, which is 1½ inch



CATTLEYA MOSSII, VARIETY RAPPARTIANA.

at its greatest width, is bright orange, tinged with scarlet. In the flowers themselves the struggle for the supremacy between the *Eupheidendrum radicans* and the *Encyclium* is strangely evident, and all the more remarkable if the total suppression of the petals, as seen in every flower of the specimen under examination, prove a constant feature. Each flower consists of three lanceolate orange-coloured outer segments more or less keeled at the back, a labellum varying in form from irregularly ovate to unequally and obscurely trilobed, and varying also in the degree of its adhesion to the column. The blade of the lip is orange-scarlet, and it bears in the centre two short and one long-raised plates or keels of yellow colour. Though not at present of great floral beauty, it is highly interesting, and the sequel to its peculiarities may be given by some of the other strange crosses which Messrs. Veitch have approaching maturity. The seeds of this were sown September 18, 1894, plants flowered June 26, 1897, according to Mr. Seden's record. *James O'Brien.*

DIERVILLA SESSILIFOLIA.

THE *Diervillas*, or Bush Honeysuckles, are handsome hardy shrubs, with white, purple, pink, or yellow flowers in axillary or terminal clusters (fig. 3, p. 14). The leaves are opposite, sessile, or petiolate and serrated. The different species are found in Japan, Siberia, Canada, and the United States. The species under notice occurs in the mountains of North Carolina. The flowers are yellow, and numerous produced on short cymes. A number of flowering shoots were exhibited by Messrs. J. Veitch & Sons, Chelsea, at the last meeting of the Royal Horticultural Society at the Drill Hall.

ESCALLONIA LANGLEYENSIS ×.

THIS pretty variety, a cross between *E. macrantha* and *E. Phillipiana*, with small pale rose-coloured flowers (fig. 4), was shown by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, at the meeting of the Royal Horticultural Society, on June 15 last. In the colour of the flower, and size of the leaves, it is intermediate between the parents; and in the warmer parts of the country, where it would be safe to risk it out of doors, it would afford desirable variety as a flowering shrub for the lawn or shrubbery border. In less warm districts the *Escallonias* should always be afforded the protection of a south or east wall. By the seaside it, like its congeners, would probably do well (see fig. 4, p. 15).

CAMPANULA BALCHINIANA ×.

ONE of the curiosities of the Temple Show was this pretty creeping-plant (fig. 5), which we could scarcely credit was a true *Campanula*. Such it proves to be, nevertheless, as shown by flowers obligingly forwarded to us by Mr. R. Dean. The stems are slender, prostrate, and like the leaves, densely hirsute, with longish, straight white hairs. The leaf-stalks are about 4 cent. (say 1½ inch) long, sulcate, expanding into a roundish, coarsely-toothed limb, the disc of which is green, the edges creamy-white. When quite young, the leaves are of pale violet colour. The flowers are solitary, on long, slender stalks. The ovary, which in *Campanulas* is inferior, outside the flower, and very conspicuous, with the sepals and petals spreading from its upper edge, is in these flowers wholly superior and enclosed within the flower. The sepals are represented by five shortly-stalked green leaves; the corolla is regular, like that of *C. isophylla*, with a short, open tube, expanding into five flat petals. There are five stamens, with imperfect anthers and a style. [In *Vegetable Teratology*, p. 80, this change is recorded as occurring occasionally. Ed.]

Learning that this plant had been raised by an eminent botanist, Mr. William Mitten, we appealed to him for further information, which he has been kind enough to give us, as follows:—

"The variegated *Campanula* grown by Messrs. Balchin & Son was raised by me from seed taken from *C. fragilis* and *C. isophylla alba*; these standing in pots I had endeavoured to intercross, and capsules taken from both supplied the seeds which were sown together. Excepting the two plants with variegated foliage, which are a little

more robust in growth, there was no appearance that *C. isophylla* had any influence on the progeny; there was much variation in the pilosity of the seedlings, but all were blue-flowered, and none different from the ordinary state of *C. fragilis*. I might have applied pollen of *C. turbinata* as well, but there was no trace of that species in the seedlings. No self-sown seedlings have ever occurred to me of *C. isophylla*, which I have only in the white-flowered form; but young plants of *C. fragilis* come up everywhere. I left Messrs. Balchin to put any name to the plant they chose. Not much was anticipated from this random intercrossing, but I may just mention that in taking up the pollen from a matured anther I have found that when a bit of black sealing-wax is drawn out to a blunt point and (when required to pick up pollen) just rubbed over the sleeve, the wax becomes sufficiently electrified that loose pollen is caught up, can be seen, and applied where desired, almost without touching a flower. *William Mitten, Hurstpierpoint, June 4."*



FIG. 5.—*CAMPANULA BALCHINIANA* × (Hort.).

Natural size, showing free, leafy, stalked sepals and superior corolla and ovary. In the diagrammatic section, S = sepal, P = petal; two hypogynous stamens and a superior ovary in section are seen.

BOOK NOTICE.

HOW TO GROW BEGONIAS. By G. A. Farini. (Sampson Low, Marston & Co.)

"THERE are no named varieties of any merit catalogued by any grower which I do not possess and have grown. I also have many novelties which I have produced by carefully hybridising. Therefore, my information is of the latest, and I hope this book will be the most complete in every detail of anything yet published."

After this introduction it would seem as if there was nothing for the critic to do but announce the publication of the book. Reference to the pages of the work is, however, sufficient to induce one to think that the author is too fond of his production to be a trustworthy judge of its merits. The history of what we know as the tuberous *Begonia* is so very interesting, that we naturally turned to the author's chapter on the subject, but only to find it by no means "complete in every detail," and the information that is given far from trustworthy. It is indeed to be regretted that the author did not consult the literature of the subject to greater purpose, and, at least, that he did not avail himself of the papers read before the *Begonia* Conference at Chiswick

and published in the *Journal of the Royal Horticultural Society*, vol. xv., 1893. Had he taken this trouble he would have avoided many errors. The history, the botanical details, and the orthography certainly need very extensive revision. One illustration taken from the chapter on hybridisation will suffice. The reader is there told that the "pollen . . . passes through small ducts to the ova or embryo-seeds in the wing-shaped, fruit-bearing receptacle." A few lines further we are informed that "the pollen throws out spores or rootlets," p. 35. The worst disease is the "fungus cladespora, the same that causes the Potato-rot." These astounding statements are unfortunate, for it leads the reader to doubt the correctness of the author's experiment on p. 35, an experiment which, if we understand it aright, was a very interesting one, though the way in which it is described might well induce mistrust.

Some of these things are not strictly included in the rubric "How to grow *Begonias*," and were it not for the fact that several pages are devoted to them, we might have passed them with the briefest reference.

It is to be hoped that the churlish refusal on the part of a brother grower to afford information as mentioned on p. 13, is not a common experience. Still more is it to be hoped that the allegation of direct falsehood, such as that made on the same page, may not often be justified.

The author is rather discursive, for after giving useful hints on certain points of culture and on diseases, he passes to the subject of a *Begonia* society.

As to the need for a *Begonia* society, opinions will naturally differ. For our own parts, considering the extraordinary results that have been obtained by Mr. Laing and other raisers without the assistance of any society, and the great degree of perfection from a florist's point of view, that has been obtained by private enterprise and skill, we fail to see the slightest necessity—so far as the improvement of the plant is concerned—for any society beyond those we already possess.

The subjects we have named take up about eighty pages, the remaining fifty-five are devoted to a descriptive list of named sorts which will be useful for reference.

The cultural details are of the briefest kind, and they are such as no gardener knowing little of the subject would consider sufficiently instructive, or the amateur, knowing probably still less of this part of the subject, find a trustworthy guide. As a matter of fact, treble the space occupied by an account of the methods of culture is taken up by an account of the effects of London fog on the *Begonia*. The advice given on pp. 19 and 20 is to the purpose as far as it goes, which is not nearly far enough, and the author gives no hint of the usefulness of the common garden frame supplied with mild bottom-heat from fermenting tree-leaves and stable manure, separately or mixed, in starting old tubers, and growing them on for a month or two afterwards.

ORCHID NOTES AND GLEANINGS.

CATTLEYA MOSSIE, var. RAPPARTIANA.

(See Supplementary Illustration.)

THIS is quite unique. At first sight it might be taken to be a form of *C. Reineckiana*, but on inspection, the atmospheric blue that pervades the lip—faint certainly, very faint—commands attention, and lifts up the form to a front-rank position. The fact that the plant, with its three flowers on it, obtained a double first—at the Manchester and North of England's meeting on the 3rd, and at the Royal Botanic, Manchester, on the 4th—under different judges, establishes its reputation. It comes nearest to *C. M. E. Ashworth*, but eclipses that variety completely. It deserves more than mere temporary recognition, and we append the following detailed description: Flower 8 inches across; sepals oblong, bluntly acuminate; petals 4 inches long, 2½ inches wide. The segments are of wonderful substance, and white. With the shade of slate-colour in the lip,

almost doubts their whiteness; but if white paper be placed at their back, and the lip concealed, the albino character becomes evident. Length of lip $3\frac{3}{4}$ inches; width at base of orifice, 2 inches; interior of the tube flushed, and marked with five orange lines. The blade of the lip has the faint ground of slate-colour, or pale atmospheric blue; and the margin, which is prominently gauffered, is clear and distinct white. On the epichilium are radiating flushed lines of pink. The whole limb is full of detail, and is one of the most remarkable *Mossias* that has ever been introduced. It is dedicated to the fortunate possessor, D. B. Rapport, Esq., Promenade, Liscard, Cheshire (Mr. Nicholson, gr.), who obtained it from one of Hugh Low & Co.'s importations, at the price of five shillings! and it was on view during the whole time of the Whitsuntide exhibition. J. Anderson.

MALFORMED DENDROBIUM FLOWERS.

A remarkable aberration occurs in one of our *Dendrobium chrysotoxum*. It has five sepals, three petals, and two lips, and the formation of the flowers differs generally from the type. A petal is substituted in place of the dorsal sepal; the other two petals are placed at a near approach to right angles. Four of the sepals are placed—two on each side—one above and one below the lateral lobes, and the fifth sepal is placed on the under side, overlapping the keel and the inner edges of the claws of the two lips. The lips are quite distinct, and proportionately formed. There are likewise two anthers and two stigmas. There is also a difference in the raceme, as it terminates abruptly in a three-flowered umbel. I may add, that the plant is in a basket, and has borne two racemes to each leading pseudo-bulb six years in succession. This year it has produced twenty-one blooms on each raceme. T. Appleby, Mentmore. [Malformations of the kind noticed by our correspondent, arising from the union of two flowers, are not uncommon, and they may mostly be traced to excessive vigour. Ed.]

CŒLOGYNE MICHOLITZ.

This species is one of robust habit with light green pseudo-bulbs bearing two leaves also of a lightish colour. The inflorescence springs from the apex of the pseudo-bulbs, and is erect with pure white flowers with the exception of a raised dark chocolate-coloured portion of the lip, which has the effect of making the flower look whiter. The plant in the Edinburgh Botanic Garden has been grown in a warm-house, and afforded a good amount of water at all times. R. L. H.

THE WEEK'S WORK.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maldenhead.

The Rosary.—My Briar stocks for budding purposes have made a much more satisfactory growth this season than has been the case for several years; and since the recent rains growth has been rapid, rendering the lifting of the rind an easy job. Rose-budding is so simple an operation, and has been described so often, that it is needless to do so here. It may, however, be stated that the buds should be inserted as near as possible to the base of the shoot selected to carry the bud, and not tied in very tightly. Soft cotton forms the best kind of binding material. Beds and borders of Roses should be looked over occasionally, and decaying flowers, and thin or flowerless shoots removed from the plants.

Own Root Roses.—Usually it is advisable to shorten the growths of standard and dwarf Roses after the first flowering, thereby inducing the lower buds to break for the second or autumn blooming; and the operation helps to keep a symmetrically formed head in the case of standard Roses. And of importance is the removal of all weak, blind, flowerless shoots from the interior of the heads of standards, and the main shoots of dwarf. The propagation of Roses from cuttings may now be done with success, and the best of the shoots that have been cut away may be utilised for this purpose. The readiest means of obtaining a good strike is by means of a partially-spent hot-bed on which a frame may be

placed, and if an aspect on the north side of a wall or hedge can be secured, less shading will be required, and the strike will be quicker. Small 60-sized pots, with a bit of rough leaf-mould at the bottom, and filled with sandy loam pressed down firmly, suit admirably for striking Rose cuttings in. The cuttings should be made from shoots having two or three buds, the lower leaf being removed entirely, and the tips only of the remaining leaves, the wood being cut clean through just below a node. Insert one cutting in the middle of each pot—three or four if they are China or monthly Roses, and some silver-sand should be allowed to run in round each cutting. Only a mild warmth is required, and after inserting the cuttings, afford one good application of water, and plunge the pots to the rim in the hot-bed, and keep them close and shaded from bright sunshine. Roots form in about fourteen days, when a little air may be admitted, and in another fortnight the pots will be filled with roots. They should then be repotted into 5-inch pots, and placed in a cold frame, where they may remain till early spring. Roses struck at this season become furnished with several shoots, and the plants produce a fair quantity of blooms the following year.

Pinks.—The flowering season of these plants being almost past, pipings may be struck if an increase of the stock of plants is desirable. Although Pinks strike pretty successfully in a hand-light or cold frame if it is kept close, roots are made quicker if a mild hot-bed be used; on this bed place a layer of sandy soil 3 inches thick, making it smooth, firm, and level, over all putting a thin covering of sharp sand, and cover with frame, cloches, or handlights. Take shoots of 3 inches in length, cut through under a joint, strip off the lower leaves for a space of an inch, cut off the points of the leaves, and the cuttings are ready for insertion. Make holes $1\frac{1}{2}$ to 2 inches apart with a little dibber, and make sure that the bottom of the cuttings touches the bottom of the holes; press the soil firmly around each with the thumb and finger, and give a thorough watering, putting on the cover an hour later. Two of the nicest Pinks are Mrs. Sinkins and Ernest Ladham's, the latter flowering rather late, and both varieties furnish a few useful blooms throughout the autumn; but those who like Pinks will not confine their attention to these two varieties, but will grow the laced, the mule, and other forms, which are all of easy culture.

General Hints on Work.—Evergreens are making unusually strong growth after the rains, and pruning, &c., where branches are encroaching on each other or on the walks and drives, will have to be attended to. For this sort of pruning the parrot-bill shears or the *secateur* are serviceable for removing large shoots, and the knife for small ones. The seed-pods should be removed from hybrid Rhododendrons, and more especially from small plants recently planted. Tender bedding-plants, and especially those used in carpet-beds, should be sprinkled overhead after hot days; and Liliums in borders freely afforded water, especially those growing in shrubbery-borders, where but little rain as a rule reaches them.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Barford, Dorking.

The Odontoglossum-house.—Such plants as *Odontoglossum Rossi*, *O. aspersum*, *O. Humeanum*, *O. Cervantesii*, *O. madrense*, and *O. Galeottiarum*, are commencing growth, but it is not advisable to repot them now, though new compost may be afforded immediately they commence to root afresh. *Mesospinidium vulcanicum*, *M. sanguineum*, and the closely-allied species, *Cochlidia Noetzeliana*, thrive best when suspended close up to the roof-glass in the cool house, but carefully avoid placing them in a line of draught from the top ventilators. Their flowering season is now past, and if necessary they may be repotted, being careful to give good drainage. Peat and sphagnum-moss in equal parts is the best compost, but requires to be pressed moderately firm around the plants. *Anguloa Clowesii*, *A. Ruckeri*, *A. eburneum*, and *A. uniflora* are now sending up strong growths, which will soon commence to emit roots from their base. If repotting be necessary, it should be done at once, using pots of moderate size, which must be well drained to about one half of their depth. The compost should consist of equal parts peat, loam, and sphagnum-moss. Until the plants become re-established they require careful watering, and it is necessary to guard against drip from the roof lodging in the centre of the growth. *Anguloas* grow well in the *Odontoglossum*-house when it is possible to afford them sufficient light; if this be impracticable, put

them in the coolest end of the intermediate-house. During the growing season the leaves are frequently attacked by scale and red-spider, and it is well to sponge them occasionally. *Dendrobium infundibulum* and its variety are two lovely Orchids, but unfortunately they are difficult of culture. One of the greatest mistakes is to grow them in too much heat. The *Odontoglossum* or cool greenhouse is the proper place for them during hot summer weather. At all times both species should be kept moist at the roots.

Deciduous *Calanthes* of the *vestita* section, now growing vigorously, should be afforded abundance of water at the root, and as young roots will push up all over the surface of the soil, it is good practice to top-dress with rough yellow loam. After the roots have seized upon the top-dressing, alternate applications of liquid manure made from cow-dung should alternate with clean water. Do not use the manure-water unless quite clear, or the compost will become sealed to the air; and at the commencement it should be largely diluted. To grow *Calanthes* well, a comparatively high temperature is necessary; but if they are grown amongst stove plants, they should be placed near the roof, and where no drip or water from the syringe will touch them. The *Regnieri* section of *Calanthes* flower in the spring, and the plants are also making their growth, requiring similar treatment to the *vestita* varieties.

Phaius.—The different varieties of *Phaius*, as *P. amabilis*, *P. Blumei*, *P. sasamicus*, *P. Wallichii*, *P. Sanderianus*, *P. grandifolius*, and the hybrids, *P. Cooksoni*, *P. Owenianus*, *P. Owensii*, *P. Marthae*, and *Phaio-Calanthe Arnoldiana*, having begun to grow, may be repotted forthwith, if any of them seem to be in need of fresh compost or larger pots. The plants succeed in a mixture of yellow turfy loam, peat, and chopped sphagnum-moss, a small quantity of coarse silver or river sand, and a handful of finely-broken crocks per plant. Place crocks at the bottom of the pot to a depth of 2 to 3 inches, over these lay sphagnum-moss; place the plant thereon, and fill to a point just below the rim, making all moderately firm. Afford water in small quantities at first—that is, till the roots are fully active, but afterwards they must receive a liberal quantity. The *Phaius* above named require the same kind of treatment as the deciduous *Calanthes* during their season of growth.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

The Pine-stove.—Early Queen Pines, now ripening fast, will require to be kept rather drier at the root, and the house more abundantly ventilated; and should any fruits show signs of ripening in quantity greater than the requirements of the place, some of them should be removed to a cool vinery, as recommended in an earlier calendar. When fruit is ripening, no more manure-water should be afforded the plants.

Succession Fruitioners should be afforded a steady bottom-heat of 85° to 90°, and when any plant requires water at the root, it should be copiously afforded; and moderately strong manure-water, at a temperature of 95°, may occasionally take the place of clear water. All suckers, excepting one on each plant, should be twisted off, and all the small ones that form round the fruit must be removed as soon as they can be got hold of. Ventilate freely on bright, warm days; close the house or pit early in the afternoon, say 2.30 to 3 o'clock, and maintain aerial moisture by wetting the walls and paths and the surface of the hot-bed between the plants, using for the latter warm water. The plants may be dewed overhead in very hot weather once a day. If the crowns grow freely, and they are likely to be unduly large, the house must be kept less moist, and the use of fire-heat at night somewhat reduced.

Successions.—Plants which early in the season were placed in the fruiting-pots will be, if they were strong plants at the time, about to finish their growth, and, if wanted for early forcing next year, they may soon be brought to a partial rest by being kept a little drier at the root, but not too much so or fruits will be prematurely thrown up. In houses and pits that have had to be shaded during the growth of the plants, shading may now be discontinued in most parts of the country, the foliage being harder and better enabled to bear the sun's rays without burning. Plants which are still in growth should be afforded water at this season twice a week in some cases, and the state of the soil ascertained twice or thrice a week. Suckers should not be kept crowded together, or

drawing of the leaves will occur; nor should they be allowed to get pot-bound, but re-arrange and repot whenever these operations become necessary.

Tomatos.—Any plants in full bearing, if showing signs of exhaustion in a stocking of the growth, &c., should be top-dressed with loam and dung, and afforded liquid-manure at alternate waterings. The top-dressings should be small in quantity, and frequent—i.e., as soon as the roots show on the surface. Rub out side-shoots, unless any are required to cover bare places. Where plants are allowed to grow and spread on trellises, the growth should be kept thin, and the points of the shoots stopped at the first leaf beyond the truss of flowers. Tomato plants grown on this modified extension method afford heavy crops of medium-sized fruit. Plants for winter fruiting should now be placed in their fruiting-pots, and securely staked, plunging the pots out-of-doors in the sunshine. Under this sort of treatment a quantity of fruit will set late in the season that will ripen during the late autumn and winter months.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Late Peas.—The latest sowings must now be made of Ne Plus Ultra, or if dwarf-growing varieties are desirable, Sutton's Latest-of-All and Omega. At Highclere these dwarf Peas do not fill their pods well when sown late, although when sown on warmer and lighter soils they may be quite satisfactory. The ground for this sowing should be made firm before sowing. Some seed of an early wrinkled variety, as Early Giant, may likewise be sown at this date, to come into use in advance of the later Marrowfats.

Vegetable-marrows.—These plants, now growing apace, should have the weaker bine thinned-out, and the stronger pegged down to the soil, to prevent a confused growth, and the better to set the blossoms. Those plants in bearing may be copiously afforded liquid-manure. As soon as the Marrows are large enough for table use, remove them from the plant, otherwise a lengthy succession of fruits cannot be expected. The month of September will be early enough to select fruit for ripening.

Mushrooms.—Outdoor Mushroom-beds will generally be more satisfactory at this season than those in an ordinary Mushroom-house, the maggots being an unavoidable pest in these during the summer. A suitable place for an outdoor-bed is one under the shade of trees, or on the north side of a wall. Beds that are becoming exhausted may be improved in bearing by being afforded a liberal supply of weak liquid-manure from the cow-sheds, at a temperature of 75° to 80°; or the bed may be sprinkled with salt, which should be washed into the soil with tepid water.

Leeks.—If the late or main crop of Leeks is not yet planted, no further time should be lost. The soil must be well manured, and the plants set out in deep drills drawn 15 to 18 inches apart, 6 to 9 inches being the distance from plant to plant. As time goes on, the drills may be filled in, which will ensure 8 inches of blanched stem, a length sufficient for ordinary use. Early Leeks in trenches should be liberally supplied with liquid-manure, and earthed-up in good time.

Shallots and Garlic.—Pull up Shallots and Garlic when the tops begin to die off, and lay them out thinly to dry on the ground where they grew, turning them over a few times till dry. If the weather be wet, dry the bulbs in a cool airy shed.

Herbs.—Flavouring herbs being now about to show flower, may be cut in quantity sufficient for requirements, and spread out thinly in an airy shed to dry. Herbs dried in the sun become brittle, and the leaves fall off. All pot-herbs of perennial growth are the better for being cut over at this season, even when not required for drying, the fresh growth that will result being more compact and more useful if required in the green state in the winter months.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Pot Strawberries.—Runners which have been layered into the fruiting-pots in the manner recommended at p. 400, vol. xxi., having established themselves by this time, may be given alternate waterings of weak liquid-manure and clear water. Pinch out all runners that push from the layered ones as soon as they appear. The plants may be sprinkled overhead on the afternoons of bright days when applying water at the roots. In the course of a few days the pot-plants

should be detached from the parent plants, and be transferred to a position where they will be fully exposed to the sun, affording space enough between the pots to prevent the plants becoming "drawn." Some boards placed on the side of gravel walks in the kitchen-garden will serve very well for the plants to stand upon. Thus placed a free passage from the pots is secured for the water, and the ingress of worms is prevented. The retaining walls of outside Vine-borders are also suitable, or any other having a south or south-west aspect which can be spared for the purpose. Rough rake the surface of the soil over, and then add between 1 and 2 inches thick of sifted coal-ashes. Stand the pots on this in breaths of about nine rows, the plants in each succeeding row standing anglewise to those in the preceding one, leaving a space of from 18 to 24 inches wide between each bed of plants that the whole may be within easy reach. Plants so placed will not require watering at the roots quite so often as plants stood on boards and retaining walls. When the pots are moderately well filled with roots, alternate waterings of diluted liquid-manure may be given, with top-dressings of some good artificial manure, bearing in mind that plants, like animals, enjoy a change of diet. The success expected next spring, in a measure, depends upon the care and treatment which the plants receive during the present and two following months.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoo Park, Luton.

Hot-house Plants.—Those plants of *Stephanotis floribunda* which have flowered, should have their growths regulated, and not be permitted to get into a tangle, and be kept as clean as possible. The shoots, if there are many, should be relieved of the weaker ones, which may be spurred back, the longer ones being laid in thinly, doing this at short intervals of time. Mealy-bug is a troublesome pest, which, if it once infest this plant, is seldom got rid of, but it may be checked by a pretty constant use of clean rain-water, and applied with the syringe twice daily. At the present time apply liquid manure liberally, and afford as a top-dressing sheep droppings or decayed cow-dung to the border or tub in which the plants are growing.

Exoras.—These plants should be afforded plenty of warmth, frequent syringing, and abundance of water at the root, shutting up the pit in which they are growing soon after midday. Any plant showing bloom may be removed to another house, where slightly more air may be given it on warm days, and somewhat less water afforded at the root.

Allamandas and Bougainvilleas may be similarly dealt with, except that the latter should be placed in a rather lower temperature when the flowers open.

Gardenias.—The young stock of plants may now be placed in the pots in which they are to blossom, viz., 8-inch ones. When, on turning a newly-potted plant out of its pot, fresh roots are seen to have run through the fresh soil, the quantity of water at the root may be increased, and the plant be well syringed daily. If the pots can be plunged to the rims in some tree leaves, tan, or cocoa-nut fibre, the plants will be much benefited during the hot weather, and the dropping of the flower-buds prevented.

Freesias.—The earliest-ripened bulbs may be shaken out, and the largest of them repotted, to the number of ten in a 5-inch pot. It is advisable to add a few fresh imported bulbs to the stock yearly, and for that purpose orders should be placed with the nurserymen as soon as possible, in order to ensure getting good bulbs.

General Hints.—Sow seed of *Mignonette* in 5-inch pots for winter use, thinning the seedlings when large enough to six in a pot, and cultivating them as advised in earlier Calendars. The best soil for *Mignonette* is a turfy loam of good quality which has been in stock for one year, mixed with one-quarter of its bulk of half-decayed cow-manure and leaf-soil, with some coarse sand, if the loam be stiff. Specimen plants trained as umbrellas afford plenty of bloom in the spring, and the best varieties are those that grow strongly, as *Machet*, *Miles's Spiral*, or *Parson's tree*. For raising this sort of specimen, sow a few seeds in the middle of an 8-inch pot, taking away all of the seedlings excepting the strongest, which, when large enough, secure to a stake of the desired height; rub off every lateral shoot till that height is reached, then pinch out the point and place on the stake a framework of neat stakes and wire, and on this train the shoots till the whole is covered, when the plant may be allowed to bloom, not earlier.

THE APIARY.

By EXPERT.

"Artificial" Increase, or Dividing Colonies (continued from p. 5.)—My second plan is to make one colony from each old one, on the principle of division of bees instead of division of brood, as in the above case. In using this plan, we must have queen cells nearly mature by the time our first colonies are preparing to swarm. Having such cells on hand, I go to a colony preparing to swarm, or one that has its hive full of bees and brood, and move it to one side of the old location, so as to put a new hive in its place. If a hive is not full of brood, and bees do not touch it, it is useless to try to increase the bees till such is the case. I now look over the combs till I find the one having the queen on it, when I place that comb in the new hive. I next give them a frame having some honey in it, and then fill out the hive with empty comb or foundation, when about two-thirds of the bees in the old hive are shaken in front of the new hive, and allowed to run in. After this I arrange the frames in the old hive, putting a division-board in place of the frames taken out, when the old hive is carried to a new location where I wish it to remain. After the bees thus removed have become reconciled to their queenless condition, I give them one of their nearly-matured cells, or a virgin queen, which will soon be laying. In this way I have secured my new swarm, controlled all after swarming, and introduced my young queen, all to my liking, and with but little trouble.

My third plan is one which I use on the weaker colonies, or those which do not get ready to swarm up to ten days or so before the honey-harvest arrives, when I proceed to make colonies from them, as follows: A hive is filled with frames of empty comb, and placed upon the stand of one of these colonies which have not swarmed, and all the sections are taken off and placed thereon; then all the bees are shaken and brushed off their combs of brood and honey in front of the hive, into which they will run as fast as shaken off. Thus I have a colony that is ready for the honey-harvest, as they have the queen-bees and partly-filled sections all in readiness to work. Previous to this, nuclei have been started, so I have plenty of laying-queens to use as I need them. I next take all the combs of brood from which the bees were brushed, except one, arranging them in the hive the bees were shaken out of, and carry them to the stand of another colony which has swarmed. I next take the comb of brood which was left out, go to one of the nuclei, take out the frame having the laying-queen on it, and put the frame of brood in its place. I take the frame—bees, queen and all—and set it in the place left vacant for it when arranging the combs of brood. I now put on the sections, and having all complete, I move the colony to a new stand, and set the prepared hive in its place. Thus I have a laying-queen, and enough of her own bees to protect her, together with a hive filled with combs of brood, and all the field-bees from the removed colony. The loss of bees to the removed colony stops the swarming impulse, and in about a week they have so regained their loss that they are ready for the sections again. In this way I make one colony from two old ones, but have all in the best possible condition to take advantage of the honey-harvest, which is soon upon us. These plans look toward a host of bees in time for the harvest, with no desire to swarm; and thus, having them gives an assurance of a large crop of honey.

VARIORUM.

CARROTS.—"The root (Carrot) was formerly, cooked in this country in a greater variety of ways than at present, and the leaves of the plant also were used as 'greens.' Between forty and fifty years ago, when the Royal Western Yacht Club at Plymouth had their club-house in Milbay, it was famous for a sweet-savoured carrot-pudding made by their cook. . . . She boiled the roots with the tops, then pressed them through a sieve, and, adding a little syrup of angelica, together with some stiffening, such as isinglass, set the dainty dish to bake. The almost metaphysical subtleties of its simple quality were the very ecstasy of taste. She also confectioned of less transcendental dulcitude a soft (*glace*) candy of the chopped root, most toothsome morsels." *Sir George Birdwood in Mem. on the Purchase in Europe of Carrot Seed*, &c., 1896.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	JULY 10	Rose Show in the Botanic Gardens, Manchester. Royal Botanic Society, Meeting.
TUESDAY,	JULY 13	Wolverhampton Horticultural Show and Fête (3 days). Royal Horticultural Society's Committees.
THURSDAY,	JULY 15	National Rose Society's Show at Norwich. Helensburgh Horticultural and Rose Show.

SALES.

FRIDAY,	JULY 16	Imported and Established Orchids, at Protheroe & Morris' Rooms.
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AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—63° 4'.

ACTUAL TEMPERATURES:—

LONDON.—July 7: Max., 68°; Min., 54°.

PROVINCES.—July 7 (6 P.M.): Max., 60°, at York; Min., 45°, at Sumburgh Head.

VICTORIA MEDAL OF HONOR.

WE are requested by the Council of the Royal Horticultural Society to give publication to the following list of the sixty gentlemen selected to receive this distinction. The honour thus conferred on eminent horticulturists of various classes in connection with the sixtieth anniversary of the Queen's reign has the distinct sanction and approval of Her Majesty:—

Baker, J. G.	Maries, C.
Balfour, Professor.	McIndoe, James.
Barr, P.	Milner, H. E.
Barron, A. F.	Molyneux, Edwin.
Beale, E. J.	Monro, G.
Boxall, Wm.	Moore, F. W.
Bull, W.	Morris, Dr.
Bunyard, G.	Nicholson, G.
Burbidge, F. W.	O'Brien, J.
Crump, W.	Paul, G.
Dean of Rochester,	Paul, W.
The Very Rev. the	Rivers, T. F.
Dean, R.	Rothschild, The Hon.
Dickson, G., Chester.	Walter.
D'Ombra, Rev. H. H.	Sander, F.
Druery, C. T.	Schroder, Baron.
Dunn, Malcolm.	Seden, J.
Ellacombe, Rev. Canon.	Sherwood, N.
Elwes, H. J.	Smith, J. (of Mentmore).
Foster, Professor M.	Smith, Martin R.
Fraser, J. (Woodford).	Speed, H.
Gordon, G.	Sutton, Arthur.
Heal, J.	Thomas, Owen.
Henslow, Rev. Professor.	Thompson, W., Ipswich
Herbst, H.	Thomson, D., Drumlanrig.
Hooker, Sir J. D.	Turner, H.
Horner, Rev. F.	Willmott, Miss.
Hudson, J.	Wilson, G. F.
Jekyll, Miss.	Wolley-Dod, Rev. C.
Kay, Peter.	Wright, J.
Laing, John.	Wythes, G.

The prevailing feeling, we imagine, on scanning the above list will be, that the omissions are more remarkable than the entries. It would be invidious now to allude to particular individuals whose services to horticulture are at least as great as those of many who are honoured as bearers of the "V. M. H." We may be allowed to point out that there are good reasons for these omissions. The Council, as we have reason to know, took counsel with a large number of horticulturists in all parts of the kingdom, with a view to secure perfect

representation and absolute impartiality, and their task must have been one of the utmost difficulty and delicacy. The members of the Council, very properly, as we think, decided that no member of their own body should be selected, and many others not officially connected with the Society, have, for various reasons, been unwilling to accept the proffered honour.

Some of the members of the Council may, on retirement, and on the occurrence of a vacancy in the list of sixty, be elected, and thus the apparent defects may in time be removed. In any case, we think the President should have headed the list as "Grand Master" of the Order; and we venture to suggest that for public, as well as personal reasons, Sir TREVOR LAWRENCE be a medallist *de jure*.

It is to be hoped that those gentlemen connected with the horticultural trade who have been selected to bear the honour will not besmirch it by using it for advertising purposes.

We think the Society deserves the gratitude of the horticultural community for this effort to confer honour on its eminent representatives.

ONCE again has been held the annual metropolitan exhibition of the National Rose Society at the Crystal Palace, and a most satisfactory one it has been. The disappointment rosarians experienced recently at Portsmouth has quickly been superseded by natural jubilation in the presence of one of the best displays of Roses that has been seen at the Palace, at any rate during recent years. It is satisfactory to know that in 1897, when anything that can be construed into "national" is unusually popular, and the means of exciting much enthusiasm, the most important display of the national flower has been one equal to the occasion. In all its sections, so different from each other, in charming variety of form, and colour, and habit, the Rose was seen on the 2nd instant as near to perfection as is possible at any one time or place.

It is quite evident that in the ripper years of the Victorian Era the Rose is increasingly popular, and a commoner garden plant than it has ever been, and this in spite of the fact that there is no institution known as Rose-day, or other fanciful means of glorifying the flower. The Rose is popular because of its exquisite form, its beautiful colours, and delicious fragrance. It is admired, not because it is known as the national flower; on the contrary, it has attained this distinction owing to the universal admiration it commands, and will retain, whether or not special efforts are made to surround the flower with the species of sentiment that exists in Ireland in relation to the Shamrock; or even in the improbable event of its ceasing to be the idol of a special society, much as this society has done to develop certain characteristics in the flower. It will be seen from a letter in our present issue, for which we are obliged to our courteous correspondent, Mr. ED. MAWLEY, that the number of exhibition blooms staged at the Palace was 7200, being 1450 more than the average for the past five years, and 100 more than at the large exhibition in 1892.

We were not surprised to find that there were no Scotch Roses shown on this occasion, as they could hardly be expected to be in condition at this date in the present season, which is naturally rather late, and which a few weeks ago promised to be much later than it really is. As it happened, the date fixed for the metropolitan show proved to be the most fortunate that

could have been arranged, just as the show at Portsmouth was an unfortunate one, because it was too early for obtaining a good exhibition. At the Palace there were Roses from Ireland, England, and Wales, and ED. MAWLEY has further divided the exhibits into the various counties. Messrs. HARKNESS SONS, of Bedale, Yorkshire, had the best exhibit of seventy-two blooms in the mixed class, and thus beat the Colchester, Chesham, and Irish growers; but Messrs. HARKNESS have now land at Hitchin, and it may be that the fact explains the circumstance that this northern firm was successful over southern exhibitors in a moderately late season. The severe frost that devastated a large part of Essex should also be borne in mind. In any case the Roses staged by Messrs. HARKNESS were Roses to be proud of, many of the blooms in the standard being faultless. In the Tea and Noisette divisions Messrs. FRANK CANT & Co. of Colchester took the leading prize with a better collection of blooms than has been seen at the Palace for some years. They were remarkably free from damaged petals; the size and form of the flowers were better, and they had more substance. These satisfactory qualities were just as observable in the amateurs' classes—indeed it was remarked many times, that the high character of these exhibits was a feature of the show. The Trophy and Replica for the principal mixed class was won by that excellent Rose grower, E. B. LINDSELL, Esq., and the equal important class for Teas and Noisettes by O. C. ORPEN, Esq. In each of these cases, Mr. C. GRAHAME was a near competitor.

The garden varieties made a brave display, but the competition was not so extensive as in some other classes. In Messrs. PAUL & SON'S exhibit, we noticed a bunch of a new, large semi-double variety, named Dawn, that appeared to be more than equal to any other in the collection in point of showiness and beauty.

The Medal Roses in every instance were worthy of the distinguished award. Last year it was indeed difficult for the judges to fix blooms that they could conscientiously award them to, but the very reverse was the case on this occasion. The names of them will be found in our report, and we will but mention here the grand bloom of the new Rose Muriel Grahame, awarded the Medal among amateurs as being the best bloom of a Tea and Noisette, and exhibited by Mr. LINDSELL.

New Roses were very conspicuous throughout the exhibition. Two of the four medals were awarded to new varieties; and in the special classes for novelties the number of exhibits was unusual, and the Society's Gold Medal was awarded in one instance. Some of the new Hybrid Teas were especially remarkable in many of the first-prize collections, notably Marquis de Litta, a French Rose of peculiarly rich colouring, and Kaiserin Augusta Victoria.

Altogether, the exhibition was a magnificent one, and the weather, though fair, being dull, the blooms remained fresh throughout the day and visitors were able at any hour to carefully inspect and admire the exhibits.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral Meeting of the Royal Horticultural Society will be held on Tuesday, July 13, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 5 P.M. A lecture on "Mutual Accommodation between Plant Organs," will be given by the Rev. Professor GEO. HENSLAW, M.A., F.L.S., at 3 o'clock.

UNIVERSITY COLLEGE CONVERSAZIONE.—The grounds and buildings of the college in Gower Street

presented a very gay appearance on the occasion of the annual conversazione held on the evening of the 30th ult. The whole of the scientific and other departments were thrown open, and numerous exhibits and experiments were on show for the entertainment of the guests. In connection with the botanical department numerous exhibits of plants had been arranged. Messrs. Wm. PAUL & SON, of Waltham Cross, had a splendid collection of pot and cut Roses in the south cloister; whilst Messrs. VEITCH of Chelsea, and Messrs. H. CANNELL & SONS, of Swanley, were well represented in the spacious anatomical museum—the former by *Nepenthes* and other carnivorous plants, *Orchids*, &c., the latter by *Begonias* and *Cannas*. Here also was a representative collection—kindly lent by CLAUDE BEDDINGTON, Esq., of dwarf Japanese trees, including *Conifers*, *Acers*, *Prunus*, &c. This attracted much attention, many of the little plants, not over 1 foot high, being quite a hundred years old. Sea-weeds and fresh-water plants were shown as transparencies by the electric light, and were very effective. In the botanical laboratory, besides other objects of interest, there was an admirable exhibit of herbaceous plants by Mr. THOMAS WARE, of Tottenham, while banks of flowers in the window-bays testified to the artistic capacity of the lady students of the department. We cannot close this notice without allusion to the decorations in the Slade School. Here the staircases and corridors were a scene of splendour. Ropes of Roses festooned the balustrades and balconies, and twined around the columns. On slabs and tables lay, in appropriate colours, quaint conventional patterns in cut flowers—altogether a very notable artistic success in floral decoration.

NATIONAL CARNATION AND PICOTEE SOCIETY (Southern Section).—The annual show of the above will be held at the Royal Botanical Gardens, Regent's Park, on Wednesday, July 21. On this occasion, the Royal Botanic Society offer two Silver instead of two Bronze Medals as previously announced; and in addition to the money prizes offered, a Silver Medal will be awarded to the best exhibit in class 1, twenty-four Carnation blooms, Bizarres and Flakes only, not fewer than twelve dissimilar varieties. And a Silver Medal for the best exhibit in class 5, twelve Carnation blooms, selfs only, dissimilar varieties. MARTIN R. SMITH, Esq., president of the society, will preside at the luncheon provided in the gardens.

ENORMOUS STRAWBERRY CROP.—In some parts of Kent this year the crop of Strawberries is quite phenomenal. From Sandwich alone during the last seven days over 100 tons of this luscious fruit have been despatched. In one day the consignments exceeded 30 tons, requiring special goods trains to convey them to London. Large quantities, however, go beyond London to the great centres in the Midlands and North, the average price being 1s. per gallon. There is now a very considerable acreage under Strawberry cultivation in Kent. *Westminster Gazette*.

LONDON WEATHER.—At the meeting of the Royal Meteorological Society, on June 16, a paper, by Mr. R. C. MOSSMAN, on the non-instrumental meteorology of London, 1713–1896, was read by the Secretary. The author has gone through the principal meteorological registers and weather records kept in the metropolis, and in this paper discusses for a period of 167 years the notices of thunderstorms, lightning without thunder, fog, snow, hail, and gales. The average number of thunder-storms is 9.7 per annum, the maximum occurring in July, and the minimum in February. The average number of fogs is 24.4, and of "dense" fogs 5.8 per annum. The decadal means show that there has been a steady and uninterrupted increase of fog since 1841. The average number of days with snow is 13.6 per annum. The snowiest winter was that of 1887–8, with forty-three days, while in the winter of 1862–3 there was not a single instance of a snowfall. The mean date of first snowfall is November 9, and of the last snowfall March 30. Hail is essentially a spring phenomenon,

reaching a maximum in March and April; the minimum is in July and August. The average number of days with hail is 5.9 per annum. *Nature*, July 1.

CRIMSON RAMBLER ROSE.—Mr. FRASER of Lea Bridge obligingly sends us a sporting branch of *Crimson Rambler*. The shoot bears two trusses of bloom. The flower-stalks in the one are relatively short, and the flowers of the usual crimson colour; whilst, in the other truss, the peduncles are twice the length of those on the normal branch, and the flowers are smaller and white as in *Rosa polyantha*. The stalked glands are alike on both branches. This may throw some light on the origin of this popular Rose.

KEW GARDENS FLAGSTAFF.—For the first time in the history of the fine flagstaff at Kew Gardens a flag was hoisted during the Jubilee week. The Government, it is said, gave a magnificent Royal Standard, valued at £70, for the purpose.

ANCIENT SOCIETY OF YORK FLORISTS.—The third of the series of minor shows held under the auspices of this society during the summer months took place on Wednesday, June 30, in the Guildhall, when there was a meritorious collection of flowers and a few plants. Cut-flowers formed the principal attraction, and included a very excellent show of *Roses*. Mr. J. W. HUTCHINSON, Kirbymoorside, was a prominent exhibitor in all the classes, and practically carried all before him. *Pinks*, the finer varieties of which appear to be going somewhat out of cultivation, were a moderate collection, but the hardy herbaceous perennial flowers made a brave show. Some very fine *Pansies* were staged, and there was the usual display of buttonholes, bouquets, &c. In the plant section there was a very pleasing exhibit of exotic and British Ferns.

JUBILEE OUTINGS.—Messrs. CHARLES SHARPE & Co., Limited, seed merchants, Sleaford, treated their workpeople to a most enjoyable day's outing on Saturday, July 3. About 200 of the women employed at the Sleaford, Ruskington, and Heckington warehouses were taken by special train to Skegness. A substantial dinner and tea were provided, and the weather being beautifully fine, nothing was wanting to make the trip a great success. On the same day forty of the clerks and male employees were treated to the Royal Agricultural Show, at Manchester, and thoroughly enjoyed the outing.

A NEW PUBLIC PARK FOR GLASGOW.—Many and varied as have been the municipal enterprises of Glasgow in recent years, none has been more remarkable than the movement for extending the public parks and open spaces of the city. Until a few years ago it was deficient in that respect, but under Sir JAMES BELL's régime an immense development took place, and during the last six years the number of the public parks of Glasgow has been more than doubled. Hitherto it has been a common complaint that the Corporation has favoured the well-to-do West End and other suburbs, and neglected the toiling thousands of the industrial East End in regard to open spaces. An important step in removing any ground for that reproach was taken on Saturday, 19th ult., when Lord Provost RICHMOND threw Tollcross Park open to the public. This consists of the grounds, extending to about 84 acres, surrounding the mansion of Tollcross, long occupied by the Dunlop family, which for two centuries has been so closely associated with the commercial development of Glasgow. When Mr. JAMES DUNLOP died two years ago, a feuing plan was suggested to meet the ever-growing demand for houses in the district; but the Corporation stepped in, and for £30,000 purchased one of the most picturesque spots in the neighbourhood of Glasgow for the use of the public. Situated three miles from the Cross, the park is just beyond the eastern boundary of the city, within a short distance of the villages of Tollcross and Shettleston, and is bounded on one side by the high road to Edinburgh. Lord Provost RICHMOND performed the opening ceremony in the course of his tour round the public parks, where the children's fêtes were in progress. *From "Edinburgh Evening Dispatch."*

INCARVILLEA DELAVAYI.—The flowering of this beautiful hardy *Bignoniad* is mentioned in a note on Prof. FOSTER's garden at p. 427 of the last volume. It may be interesting to record that a Scottish correspondent has obligingly sent us flowers from Munches in Perthshire, N.B.

THE GARDENERS' COMPANY.—At a meeting of the Court of the Gardeners' Company, held at Vintners' Hall, Upper Thames Street, on Tuesday, Mr. N. SHERWOOD was installed as Master, and Sir WILLIAM FARMER and Mr. PHILIP CROWLEY as Wardens, of the guild for the second year in succession. The ceremony was followed by the "Master's installation banquet," at which the Master, who presided, was supported by, amongst others, Mr. R. J. SEDDON, Premier of New Zealand. Lord AMHERST proposed the toast of "The Colonies." Mr. R. J. SEDDON responded. He represented, he said, "the Garden of England," and he felt that an injustice had been done to New Zealand and the other colonies by their Prime Ministers having been invited within the last forty-eight hours to visit Ireland "in native costume." Colonists, he proceeded, were proud of their connection with the mother country, and throughout all their many privations they had never had the slightest desire to sever that connection. But he was in the habit of speaking plainly, and he desired to say that the Prime Ministers of the colonies had found, during their present visit to the mother country, that they were more in touch with the people of the mother country than they had been with its rulers. They warmly appreciated the reception they had had from the people, and the earnest desire which had been manifested to welcome them and to promote their welfare and happiness.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of this Society on June 12 last, the Floral Committee awarded First-class Certificates to *Anemone coronaria* fl. pl. *The Bride*, shown by Messrs. E. H. KRELAGER & SON, Haarlem; to *Pteris Wimsetti*, shown by Mr. H. J. LEMKES, Jr., Alfen a/R; to *Rosa hybr.* *Thea Souvenir du President Carnot*, R. h. T. *Souvenir de Madame Eugène Verdier*, and R. h. T. *Fiamette Nabonnand*, shown by Mr. JAC. SMITS, Naarden. Certificates of Merit were awarded to Messrs. J. STRAVERS & SON of Willige, Langerak, for *Pelargonium zonale Hortulanus Budde*; and Messrs. E. H. KRELAGER & SON, for *Tropaeolum Leichtlini*.

THE NATIONAL AMATEUR GARDENERS' ASSOCIATION held an exhibition and garden party in the grounds of the Royal Botanic Society in Regent's Park on Saturday, the 3rd inst. Mr. R. G. DOUGALL, of Walthamstow, secured the prize for the "Pye" championship for *Violas*; Messrs. JNO. LAING & SONS, Forest Hill, made a display with *Begonias*; Messrs. CANNELL & SONS, Swanley, and Mr. H. J. JONES, of Lewisham, had also meritorious exhibits.

ISLE OF WIGHT HORTICULTURAL IMPROVEMENT ASSOCIATION.—The monthly meeting of the above association was held at Shanklin, on Saturday, July 3. Dr. J. GROVES, B.A., presiding; and a paper was read on the "Cultivation of *Gloxinias*" by Mr. N. JOLLIFFE of Woodside Gardens, Wootton. The exhibits, which were many and meritorious, included *Streptocarpus*, *Roses*, *Shirley Poppies*, *Cannas*, and *Violas*. Arrangements were made for an excursion to Brooke House, the residence of Sir CHARLES SEELY, president of the association, on July 14. The next meeting will be held at Ventnor, when Mr. C. ORCHARD will read a paper on the "Progress of Horticulture in England in the last sixty years."

IMPORTATION OF PLANTS TO THE CAPE.

IN reply to a correspondent, we publish, through the courtesy of the Cape Government Agency the following regulations at present in force at the Cape of Good Hope in virtue of a Proclamation by Sir Hercules Robinson, Bart., Governor of the Colony, dated March 25, 1896, as follows. It will be seen that considerable relaxation has taken place in the regulations affecting the introduction of plants other than Vines.

IMPORT REGULATIONS.

"I. The importation into this Colony from places beyond the boundaries thereof, of all Grape Vines or cuttings or portions of Grape Vines, is absolutely prohibited, with the exception of Vines or portions thereof, imported by the Government of this Colony under such precautionary measures as it may decide to be necessary.

II. All trees and plants other than Vines, and all parts thereof, and all fruits of any description, and all tubers, roots, bulbs, or portions thereof, and all packages, cases, pots, or coverings whatsoever containing such, shall, before being introduced into this colony from places beyond the boundaries thereof, undergo a strict examination by a competent officer appointed for that purpose, to determine as far as possible the absence of noxious insects and plant diseases which it would be prejudicial to this colony to allow to be introduced; and it shall be the duty of the consignee to open all such packages, cases, or coverings, for the purpose of the examination aforesaid, and to afford every facility to the said examining officer during his examination.

III. On the aforesaid officer being satisfied as to the absence of noxious insects and plant diseases in such trees, plants, fruits, tubers, roots, bulbs, or portions thereof, and their packages, cases, pots, or coverings, he shall give a certificate to that effect to the consignee; and without such certificate no such articles shall be landed.

IV. All trees, plants, fruits, tubers, roots, bulbs, or portion thereof, or the packages, cases, pots, or coverings in which they may be packed, which shall be found to be infected with any noxious insect or plant disease, shall be cleansed or disinfected by the consignee in the manner prescribed by and to the satisfaction of the examining officer; and if not so cleansed or disinfected, or if such disinfection shall be deemed or found to be ineffectual, shall be immediately destroyed.

V. The importation or introduction of any stone-fruit tree, or any fruit, scion, cutting, graft, root or seed, the growth or produce thereof, from the United States of America or the Dominion of Canada, is hereby absolutely prohibited, and anyone importing or introducing such fruit tree, or other article the growth or produce thereof, as aforesaid, shall, upon conviction, be subject to the penalty provided in the body of this Proclamation; and in addition thereto, the fruit tree or other article imported shall forthwith be destroyed.

VI. Save as in the preceding clause mentioned, all stone-fruit trees, or other articles, the growth or produce thereof, may be imported and introduced into this Colony, subject to the provisions laid down in Clauses 2, 3, and 4, preceding, provided that such consignment of trees or other article be accompanied by a sworn declaration from the consignor that the articles proposed to be imported were not grown in the United States of America or in the Dominion of Canada, and without such declaration no such articles shall be imported.

VII. On the examining officer being satisfied as to the sufficiency of the declaration in section VI. above mentioned, he shall give a certificate to that effect to the consignee; and without such certificate no such articles shall be imported.

VIII. The Government does not hold itself responsible for any loss or damage that may result from the destruction of the articles under the provisions of these regulations, or from any process that may be considered necessary to cleanse or disinfect the articles or to discover the existence or otherwise of any noxious insect or plant disease.

IX. These regulations shall not apply to canned or preserved fruits."

KEW NOTES.

CAMOENSIA MAXIMA.—The Kew plant of this fine African Leguminous plant is again flowering. I suggested last year that probably age was the principal factor in the flowering of this plant, and that it would most likely flower annually now that it had reached what we may call maturity.

HIBISCUS ARCHERI.

This is a hybrid between *H. rosa-sinensis* and *H. schizopetalus*, which originated in the West Indies, from whence it was sent to Kew, where it flowers all through the summer in the porch of the Water Lily-house, along with a selection of forms of *Hibiscus*. It has the habit of *H. rosa-sinensis*, and the form of flower of *H. schizopetalus*; but in size, the flowers are about three times as large, and they are coloured bright crimson. I am informed by Mr. Hart, of Trinidad, that this hybrid is a well-known garden plant in the West Indies, but I never saw it in England before last year, when it flowered at Kew for the first time. It is named in compliment to Mr. A. S. Archer, of Antigua, who sent it to Kew.

KALANCHOE FLAMEA (Stapf).

This is a new species, of which a description will shortly be published in the *Kew Bulletin*. It is a beautiful greenhouse plant, quite distinct from all other *Kalanchoes* in the size and colour of its flowers, whilst in habit it is all that the market grower could desire. The stems are erect, a foot high, each bearing about ten pairs of fleshy-green spatulate leaves, 2 to 3 inches long, and a terminal erect flower-stalk 6 to 9 inches long, bearing a compound umbel 5 inches across, composed of crowded four-petalled spreading flowers $\frac{3}{4}$ -inch wide, and of the richest orange-scarlet colour. In effect the flower-heads are intermediate between *Crassula coccinea* and *Bouvardia President Cleveland*. It has been in flower in the Cape-house at Kew for over four weeks, and it will last several weeks longer. For its introduction we are indebted to Miss Edith Cole, who collected seeds of it in Somaliland, and sent them to Kew in 1895.

CALOCHORTUSES.

A collection of these has been and still is an attraction in a narrow, sheltered border on the south side of the T Range at Kew. They were planted in November, and until April the rain was kept off them by means of lights. They commenced to flower about the middle of May, and they are likely to go on flowering for some weeks yet. Some of them are small in flower, and would be considered weedy by many cultivators, but the following are large and handsome, and quite as worthy of cultivation as the best of Tulips: *C. clavatus*, flowers nearly 3 inches across, the segments forming an elegant cup coloured rich citron-yellow, with a faint zone of brown at the base and a lining of yellow hairs; *C. Vesta* has flowers as large as those of *C. clavatus*, white, with feather-like markings of maroon inside; *C. macrocarpus* is the giant of the genus, the stems being nearly 2 feet long, the flowers 4 inches across, the three outer segments long and narrow, the three inner very broad; the colour is a rich mauve, paler in the throat, where there are numerous yellow hairs; *C. venustus* has elegant cup-shaped flowers, 2 inches across, white, tinted with mauve and blotched inside with purple-brown; the variety *oculatus* is white with yellow throat, mottled and blotched with dark brown; and the variety *venustus* is citron-yellow, with three eye-like blotches of maroon. W. W.

SCOTLAND.

NOTES FROM ROYAL BOTANIC GARDEN, EDINBURGH.

SAXIFRAGA LINGULATA.—Plants of this showy species are grown here in pots for the purpose of greenhouse decoration, and when in flower form quite a pretty group, the lightness of their inflorescences lending themselves well for use in this way. The stems rise about a foot above the glaucous, serrated rosette of leaves, and bear many flowers with white petals bearing numerous dots of red at their base.

Another plant resembling the previous one is *S. Macnabiana*, raised in these gardens from seeds of *S. pyramidalis*, supposed to be crossed with *S. lingulata* or *S. Hostii*. In habit and colour it is like the first-named, and is a desirable greenhouse or frame plant.

HIBBERTIA VOLUBILIS.

This is undoubtedly the finest of these free-growing plants, and bears the largest flowers of the genus. If planted out in a fairly rich, sandy soil against a wall in a greenhouse, it quickly throws up its long twining branches, from which short secondary branches are given off, bearing at their apex the large bright yellow blooms, 2 inches in diameter. This method of growth shows off to better advantage the flowers than that of growing upon the roof, as the foliage in this position forms a better background. *H. dentata* is also a good climber, but far less showy. They are both now in flower here, and will continue in bloom for some time longer.

OXALIS VARIABILIS RUBRA AND ALBIFLORA.

For greenhouse decoration these plants are among the best of this large genus, and as an edging to a stage or bed are extremely showy and attractive. They are of low growth, the green foliage of three leaflets being borne upon short petioles about 2 inches long. Above this bed of green the single flowers are raised. The flowers are about an inch in diameter, of a rosy colour, with a yellow throat. Grown together, they form a pretty patch of colour during their flowering, and in this respect they are most profuse, some sixteen to twenty flowers being counted on 4-inch pots. R. L. H.

COLONIAL NOTES.

BATS FERTILISING FLOWERS.

A RECENT *Bulletin of Miscellaneous Information*, from the Royal Botanic Gardens, Trinidad, contains the following note about bats fertilising the flowers of *Bauhinia megalandra*, a species indigenous to Trinidad. This plant grows to as much as 30 or 40 feet in height, and forms a stem of large size. Its flowers are large, white, and their anthesis takes place in the evening hours only, from about 4 to 6 o'clock, darkness setting in with us at the latter hour at this season of the year (January). For about half-an-hour before darkness sets in, various species of bats (*Cheiroptera*) can be seen rapidly visiting flower after flower, and as they leave, portions of the white petals can be seen to fall to the ground. An examination of the tree on the following morning will show that not a single perfect flower remains, all being more or less ragged, torn, and deprived of their large white stamens and petals. The bats on visiting a flower alight upon and hold fast to the protruded stamens, and appear to attack the erect and recurved petals, as these are completely scratched or broken to pieces, and sometimes torn quite away from the flower. Sometimes the stamens also are broken short off at their base, but the stigma seldom appears to be injured. There does not appear to be any nectar secreted by the flower which it is possible for the animals to obtain, and it is therefore probable that they visit the flower for the purpose of securing the insects that are attracted thereto by the odour it exhales, and to effect this purpose, place themselves in such a position as to bring the stamens of the flower into contact with the stigma, and secure the fertilisation of the flower.

PRUNUS JACQUEMONTI.

THE much more extended limits given to the genus *Prunus* in the later and now generally accepted classifications make it a very large one, and of its various groups none is more charming than that which includes the dwarf Cherries. To this section belongs the species now shown (fig. 6). It is one of the latest to be introduced, seeds of it having been sent to Kew by Dr. Aitchison less than twenty years ago. They were collected in the Kurrum Valley, and from them the first cultivated plants were raised. The largest, and the one from which the flowering branch now figured was obtained, is now about 7 feet high, and nearly as much through—a rounded bush, sweeping

the ground with its lower branches. It is a native of Thibet, Afghanistan, and the north west Himalaya, at elevations of 6000 to 12000 feet; it is perfectly hardy in most parts of this country.

The leaves are ovate, toothed, $1\frac{1}{2}$ to 2 inches long, and covered with short hairs when young. The flowers are very like those of the dwarf Almond (*Prunus*—or *Amygdalus*—*nana*), being half an inch in diameter, and of a bright rosy-pink. It is at its

Jacquemonti. The chief botanical distinctions between the two are to be found in the stipules and in the lobes of the calyx. In *P. Jacquemonti* the stipules are lacinate, in *P. humilis* they are ciliate and glandular; in *P. Jacquemonti* the calyx lobes are pointed and reflexed, in *P. humilis* they are blunt, erect, and twice the proportionate length. Both may be planted singly or in groups, towards the front of the shrubbery. *W. J. B.*



FIG. 6.—*PRUNUS JACQUEMONTI*. (SEE P. 22.)

best about the middle of April, and its beauty and the great profusion of its blossoms at that time will recommend it to all lovers of hardy trees and shrubs. A species closely allied to this is *P. humilis*, so closely, indeed, that the two may easily be confused. *P. humilis*, however, is Chinese, and in my experience not so free-growing and beautiful a shrub as *P.*

the north side of the Campsie range of hills, and at an altitude of over 600 feet above sea-level, being a cold one; and I asked Mr. Taylor, the gardener, what were his methods of growing Cauliflowers to obtain them so early? The variety he said that I saw was Early Snowball, and the seed was sown in the open air last August, and after the plants were large enough for handling, they were pricked into a cold frame, where they were protected from frost during the winter. About the first or second week in January they were put into pots, and taken into a vinery just about to be started, where they were kept as near the light as possible. After the roof became covered with the foliage of the Vines, they were shifted into cooler quarters, and gradually hardened-off. As the plants were then of large size, they had to be carefully handled when planting them out in the first week in April on a border in front of a range of glasshouses, in a sort of double line, quite close to the glasshouse. At night they were covered with light material, conveniently arranged, to ward off frost. By the end of the month of May the first of them were ready for cutting, and the crop off the ground before the end of last month. This method has something in it to commend itself to gardeners in general, because most of them have the accommodation above mentioned, and by using Methven's June Broccoli, they would have a continuous supply without the necessity of growing their first crop under glass. *D. L. M.*

PEARS.—Surely "H. H. R." is somewhat captious in his reference to my remarks on Pears in 1837 and now. I have said nothing whatever to discount the high merits of Marie Louise, or of Citron des Carmes, or of Williams' Bon Chrétien, all first-rate varieties of their season. I praised or blamed none individually, but in mentioning a dozen of the best of 1837, said that a select list now would show very superior excellence. Of the eating varieties mentioned the very few ranking high to-day are the three mentioned, and Passe Colmar, Glou Morceaux, and Duchesse d'Angoulême when well grown. But several others would not come in at all. Besides Doyenné du Comice, a variety that is amongst Pears what Cox's Orange-Pippin is amongst Apples; both fruits having raised our estimate of true flavour and quality materially in each case. There are Winter Nellis, Louise Bonne, Beurré Rance, Marie Benoist, Thompson's, Seckle, Easter Beurré, Brown Beurré, Josephine de Malines, Beurré Superfin, and indeed many others that could be named, in which average excellence is much higher than it was in Pears sixty years since. As to baking Pears, I specially exempted these from the qualification. It was eating Pears only that were compared. *The Writer.*

THE CRYSTAL PALACE ROSE SHOW.—If the exhibition of the National Rose Society at Portsmouth was the smallest the society has yet held, that which took place at the Crystal Palace on the 2nd inst. proved on the other hand the most extensive on record. The number of exhibition Roses staged in competition on that occasion amounted in all to 7,200, or 1,450 more than the average for the five previous metropolitan shows of the society, and 100 blooms more than at the largest of those exhibitions, that of 1892. There were over 100 exhibitors, whose exhibits arranged according to the number contributed by each county were as follows:—Essex heads the lists with 71 exhibits, Surrey comes next with 51, then Middlesex with 35, Herts 34, Kent 32, Oxford 29, Notts 26, Somerset 20, Sussex 20, Worcester 19, Gloucester 15, Suffolk 15, Berks 12, Leicester 10, Wilts 8, Bucks 7, Devon 6, Hants (including Isle of Wight) 6, Derby 5, Northampton 5, Yorks 3, Bedford 2, Cambridge 2, Shropshire 2, Dorset 1, Stafford 1, and Warwick 1. In addition to the English contributions, seven exhibits came from Wales, and eleven from Ireland; but, unlike last year, there were no Scotch-grown Roses. Seldom, if ever, has the society held a more enjoyable exhibition. The day, although dull, proved fine and cool, thus allowing the blooms to continue fresh and bright during the whole day. The general quality of the flowers was remarkably good, and particularly was this the case in the exhibits from many of the smaller growers. Moreover, there was at no time any overcrowding, so that the blooms could be inspected in comfort by both members and visitors. *E. M., Berkhamsted.*

HOME CORRESPONDENCE.

EARLY CAULIFLOWER.—When visiting Mr. J. C. Dun Water's gardens at Craigton, Stirlingshire, on June 5, I was surprised to observe a large number of Cauliflowers ready for consumption. This was the more striking from the fact of the valley of the Endrick, on

CELERIAC.—In the article of July 3 on "Plants of the Victorian Era," you state that Celeriac was added to our varieties of Celery during the Queen's reign, but it was grown in 1791, as proved by the

following quotation taken from an old *Gardeners' Kalender* I possess, by Thomas Mawe, gardener to the Duke of Leeds; John Abercrombie, gardener, Newington, Surrey, formerly of Tottenham Court, Middlesex, and other gardeners. "Let it be observed there are two sorts of Celery; one known by the name of Italian, or upright Celery; the other called Celeriac, or Turnip-rooted Celery." A. Goldring. [It was known long before, but not in general use here till the time mentioned. Ed.]

ANNUAL STRAWBERRIES.—Strawberries grown as annuals have many advantages over those grown as perennials. In the first place, you save a year by very little extra labour; layering them into small pots does not take so much more time than laying them into nursery lines till the spring, as is generally done. Then, what fine fruit you get off the annuals! and so far as I have practised the annual system, nearly all sorts do well treated so, especially Noble, Royal Sovereign, Keen's Seedling, and British Queen. Here let me say Noble ripens quite a week earlier than Royal Sovereign or the Vicomtesse. Perhaps it will be of interest to those of your readers who have not tried this plan if I give a short account of how I proceed. I plant a few lines of runners in the spring of the varieties I wish to treat as annuals, keep all flowers picked off, so as to throw all the strength of the plant into the runners; layer them into 3-inch pots as soon as I can get them, sink the pots level with the soil, which keeps them moister, and there is less danger of the miniature plant being displaced. I usually place a small stone on the pots to keep the runners in place till rooted, though pegs do equally well. As soon as nicely rooted in the pots, severing them from the parent plant, placing them behind a north wall for a week or ten days, till fully established, then planting them out from 1 to 1½ foot apart in well prepared ground, deeply worked with plenty of rotten manure incorporated with the soil. When planting, they want to be made quite firm, which conduces to sturdy growth, well matured in dry weather, and frequently stirred with a hoe. It is the practice of some good cultivators to mulch them in the autumn, but I do not think it at all necessary to do so; in fact, I think leaving them fully exposed to the frost is an advantage, especially on heavy land such as I have here. And by leaving them unmulched till the end of April, you can conveniently keep them well stirred with the hoe. A light sprinkling of some good artificial manure dusted over them in showery weather will help them greatly when showing their flowers, and the cultivator will be rewarded with fruit of large size and first quality. The sorts I find to do well thus treated are Noble, Royal Sovereign, Sensation, Keen's Seedling, and British Queen. *James Dryden, Grove Park Gardens, Kingsbury, Middlesex.*

STRAWBERRIES.—Royal Sovereign, for size, form, flesh, brightness of colour, and nice flavour, is an early variety unsurpassed. Here, with us, growing alongside of Laxton's Noble, it ripened at the same time, but the fruits were better in every respect; if the variety behaves as well generally, it is likely to become very popular. As a forcer I have seen it very fine. Mr. Hall, at Roydon Hall, Tonbridge, who forced some of the plants, speaks in the highest terms of it. In the north of England, too, I had the opportunity of seeing very fine plants heavily cropped. As regards some of the newer Strawberries, I found but little, if anything, to recommend them in preference to old varieties. There is no utility in cultivating a great number of varieties, and six to eight are, in my opinion, ample in most gardens. Where a great number are grown, there is much care required to keep the stocks true. I always found Noble, when grown on the single-crown system, useful fruit for affording early dishes, but the flavour is poor, and the pulp soft—still, it is of use as forming a succession to the forced plants. Royal Sovereign will probably take its place in course of time. Vicomtesse d'Horcail du Thury, Sir C. Napier, La Grosse Sucrée, President, Sir Joseph Paxton, Oxonian, and British Queen, are amongst the best Strawberries that I ever grew, and I can speak of all of these doing well in pots, too, with the exception of the last-named, which I never grew as a pot-plant. Auguste Nicaise grows to a great size, but I do not think much of it, the fruit being coarse—still, it may be excellent in some places. Fruits of the better class which turn the scale at, say, 1 oz., are, in my opinion, large enough for dessert purposes. Those who like deep-coloured fruits will find in Waterloo one to suit them. Some

twenty years ago I was living in North Lincolnshire, and in that part Dr. Hogg and Admiral Dundas were largely grown. The fruits of the latter grow to a good size, and are of very good flavour. *H. Markham, Margate, June 28.*

THE RENAISSANCE OF THE HOLLYHOCK.—In a measure I wish to corroborate one of the statements of your correspondent "D. T. F.," p. 407, on the above subject. About two years since I was looking round Messrs. Sutton's nursery and trial-ground in the London Road, Reading, in company with Mr. Martin, the well-known foreman, and in that well sheltered and favourably situated piece of ground, I saw the healthiest piece of Hollyhocks I had seen for many years. I asked Mr. Martin if the disease still gave trouble, he said, "Well, those do not show much sign of it, do they?" and I thought so too, but he said, "We do them well, and as soon as a diseased leaf shows itself we burn it." I have tried many remedies for the Hollyhock fungus, but without success. Twenty years ago a gentleman connected with the horticultural press asked me to try some remedies and report thereon, but they did no good, and I let the matter drop. This year I have tried the mixture I use for the Apple and Pear trees, viz., a weak solution of the Bordeaux Mixture and Paris Green—and with no effect. I had them dressed with bone superphosphate, and dusted with sulphur, but with no beneficial result; it is still a case of an affection for which a remedy is still wanted. *R. M., Newbury.*

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

JUNE 29.—*Present:* Mr. McLachlan (in the chair); Rev. W. Wilks, Prof. Church, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

Romneya, diseased.—The following report was received from Kew upon the specimens sent to the last meeting:—"The disease is caused by an obscure organism, considered by Prunet as a species of *Cladochytrium*. A preliminary notice is given in *Comptes Rendus*, October 1, 1894. The detailed account there promised is not yet to hand."

Grapes attacked by Gloeosporium.—With reference to the examples sent to the last meeting, Mr. Malcolm Dunn writes, after inspecting the Vine-houses at Aughterarder House, that "the vine is of the usual 'lean-to' form, well heated and ventilated, with everything in good order for growing healthy Vines and first-rate Grapes. The Vines comprise some six or seven varieties, but only Black Hamburgh suffers to a serious extent from the disease; although it could be detected on a few berries of Foster's White Seedling, and still fewer of Alicante. As far as I can remember, Muscat of Alexandria, Lady Downes, Madresfield Court, Gros Colman, and one or two others were not affected, although intermixed with the Vines attacked. The Vines are all in vigorous health, and bearing a fine crop of splendid bunches of Grapes. With regard to the treatment they were receiving, I saw nothing to which I could object."

Harpalus ruficornis attacking Strawberries.—Mr. McLachlan showed specimens of this beetle, which belongs to a carnivorous family. Its prevalence in Strawberry-beds is probably caused by the presence of the litter. That it will attack Strawberries has been known for the last ten years, and that it has destroyed entire crops. As it is nocturnal in its habits, it must be looked for at night, for it lives in the soil.

Fruit and Vegetable Committee.

JULY 1.—A meeting of the Fruit and Vegetable Committee was held at Chiswick on the above date, and there were present Messrs. BUNYARD, Chairman; and Messrs. W. Wilks, J. Smith, G. Sage, W. Pope, J. H. Veltch, R. Fyfe, A. Dean, A. F. Barron, A. H. Pearson, and J. Hudson.

Fifty-four varieties of Peas, including several of standard varieties for comparison, were examined, but only three awards of the lowest class were made—that is, 2 marks. It is well to make clear that, in Chiswick parlance, 2 marks represent a commendation, 3 marks high commendation, Award of Merit very high commendation, and First-class Certificates only very superior excellence and distinctness.

The Awards of 2 marks were made to Saccharine (SIX), having haulm 4 feet in height, and long green, somewhat sugary pods; to Dickson's Harbinger, with haulm 4 feet high, very productive, medium-sized pods, but early; and to Parchment Pea (VULGARIS), an odd appellative for one of the flat-podded forms that are esteemed by some when cooked whole. Generally the Peas grown showed no advance or variation on older varieties, and indeed there was none so good as the best of last year's trials.

Some Broad Beans were next examined, and an Award of Merit was given to Dobbie's Champion, a good cropper, the pods long, clean, and handsome. Three marks were given to Harrison's Robin Hood, a Green Long-pod, and a capital

stock; and also to Exhibition Long-pod, from Messrs. R. VERRIN & SONS, practically confirming a previous award. This is a capital stock of the Seville type of Bean.

A large collection of Strawberries was then examined, the bulk of the plants being in fine condition, and cropping well, some having remarkable produce. Of these, Newton Seedling, Wonderful, Acquisition, and others were strikingly productive. The only award made was to Wonderful, a variety having long scarlet fruits, not large, but produced in great abundance; to this an Award of Merit was given. Edward Lefort, Countess, Auguste Boisselot, Royal Sovereign, President, all so good last year, were again of the best for flavour—a feature so markedly absent in the bulk of the varieties. Two new ones of yearling plants only, Admiral and G. Wythes, showed considerable promise, but they will have to be examined another year. No doubt, as a huge cropper, where quality and solidity of flesh is of little importance, Acquisition is the variety to grow; and for preserving, Newton Seedling is, without doubt, a marvellous cropper.

Mr. HAWES, of Slough, sent a Melon, Golden Jubilee, which was thought to be a reproduction of Hero of Lockinge; and a second fruit came from elsewhere that was imperfectly ripened, though showing fair flavour. Mr. A. J. WARD, of Richmond, showed from his allotment on the corporation group, splendid examples of Daniel's Alderman Pea (a superb variety), Maincrop, Eureka, Gradus, stragatema, and The Daniels, a good Telephone, and was unanimously awarded a Cultural Commendation. He also showed a good sample of exhibition long-pod Beans.

Floral Committee.

Roses and Violas at Chiswick.—The Floral Committee met at the Chiswick Gardens to inspect the trials of Tea Roses and Violas, the former as to their adaptability for bedding or planting-out for garden decoration. Some had not done well, and others were not yet fully in bloom; but the following were selected for Awards of Merit:—Innocents Pirola, Souvenir de Paul Neyron, Marie Van Houtte, Grand Duc de Luxembourg, Etoile de Lyon, François Kruger, Hon. Edith Gifford, White Lady, William Allen Richardson, Madame Pernet Ducher, Augustine Hatern, and Edouard Sallabelle. Of Violas the following were selected for Awards of Merit:—Iona, Pencilland, Blue Gown, Mrs. Bellamy, and William Niel. The Floral Committee made a recommendation to the effect that a comprehensive trial of Violas should be arranged for at Chiswick in 1898, and the varieties of one colour, such as yellow, blue, white, &c., be planted side by side so as to admit of close comparison.

NATIONAL ROSE.

JULY 2.—The Metropolitan Show of this Society was held at the Crystal Palace on the above date, and was very successful. The exhibits were staged in the space opposite the great organ. (See also pp. 20 and 23).

Seventy-two distinct single trusses.—The unusual quality of the blooms throughout the show was well illustrated in the first and most important class, by which the Trophy and Replica were won. There was plenty of competition, and an abundance of good flowers. However, Messrs. HARKNESS & SONS, Bedale, Yorks, and Hitchin, the winners of the same class last year, were well let. The blooms staged were—Back row: Ulrich Brunner, Mrs. Paul, Etienne Levet, Mrs. S. Crawford, Horace Vernet (a very pretty bloom, and awarded a Medal), Mrs. Jno. Laing, Gustave Piganon, Marquise de Litta, Dupuy Jamain, François Michelin, A. K. Williams, Helen Keller, Marquise de Castellane, Her Majesty, S.-M. Rodocanachi, Marchioness of Londonderry, Marie Verdier, Exposition de Brie, Caroline Testout, Earl of Dufferin, Madame E. Verdier, Marie Baumann, Comte de Rahm-baud, and Madame Jos. Bonnavier. Centre row: Madame Gabrielle Luizet, Prince Arthur, K. A. Victoria, Comte de Ludro, Mrs. W. J. Grant, Marie Rady, Star of Waltham, Marchioness of Dufferin, Camille Bernardin (good), Catherine Mermet (fine), General Jacqueminot, Thomas Mills, Lady Mary Fitzwilliam, Captain Christy, Chas. Lefebvre, Marchioness of Downshire, Duc d'Orleans, Madame Montet, Ed. Andry, Souvenir d'Elise, Captain Hayward, Maréchal Niel, Mrs. Jowett, and La France. Front row: Dr. Andry, Duchess de Morny, Madame Hausmann, Baroness Rothschild, Fisher Holmes, Silver Queen, Duke of Connaught, Madame Cusin, Duke of Wellington, Beauty of Waltham, Abel Carrière, White Lady, Xavier Olibo, Margaret Dickson, Jean Linbaud, Madame de Watteville, Duke of Edinburgh, Duke of Kent, Madame Delville, Victor Hugo, Vicomtesse Folkestone (?), Crown Prince, The Bride, and Sir Rowland Hill.

The veteran exhibitor, Mr. B. R. CANT, of Colchester, was not many points behind Messrs. HARKNESS, and his collection of blooms made a capital exhibit for 2nd place. Marie Baumann, Caroline Testout, A. K. Williams, Gustave Piganon, Madame Eugénie Verdier, Madame de Watteville, Countess of Rosebery, Madame Cusin, Lady Helen Stewart, Maman Cochet, The Bride, Souvenir d'un Ami, Duchess de Morny, Alfred Colomb, Madame Hoste, Souvenir de S. A. Prince, &c., were all good and exemplary. The 3rd position was taken by Messrs. FRANK CANT & CO., Braiwick Nursery, Colchester. The following were instances of capital blooms in this stand, Bridesmaid, Madame Cusin, General Jacqueminot, Jeannie Dickson, Souvenir de President Carnot, Pride of Reigate (the striped Rose), Star of Waltham, Marie Rady, and Souvenir de Elise. Messrs. PAUL & SONS, Chesham, and ALEX. DICKSON & SONS, Newtownards, Ireland, also competed with credit.

Forty distinct Roses (trebles).—Mr. B. R. CANT was the winner of the 1st prize in this class, and it was won with an exhibit of much merit. The trebles most effective were those of Etienne Levet, L'Havre, Earl of Dufferin, La France, Madame Eugénie Verdier, Camille Bernardin, Marquise de Litta (this new Rose in excellent form), A. K. Williams, Mrs. Jno. Laing, Mrs. Sharman Crawford, Gustave Piganeau, A. Colomb, Victor Hugo, Helen Keller, Madame Cusin, Duchesse de Morny, and Beauty of Waltham. Messrs. HARKNESS & SONS were little behind the winners of the premier honours, for their stand was beautifully bright, and some of the trebles of first-class quality. Such were Gustave Piganeau, Marquise de Litta (a really good Rose), Marie Baumann, Camille Bernardin, Helen Keller, Comte de Raimbaud, Horace Vernet, &c. The 3rd prize was taken by Messrs. F. CANT & Co., of the Braiswick Nursery, Colchester.

Forty-eight distinct trusses.—The quality of the blooms in this class was below that in the competition for the best seventy-two blooms. Messrs. TOWNSEND & SONS, Lower Broadmeath, Worcester, were 1st, and the varieties they exhibited we append. Back row: Gustave Piganeau, Lady Mary Fitzwilliam, Heinrich Schultheiss, Pride of Waltham, Chas. Lefebvre, Mrs. Sharman Crawford, White Lady (good), Alfred Colomb, Marquise de Litta (very fine), Caroline Testout, Camille Bernardin, Mlle Eugénie Verdier, Victor Verdier, La France (good), Dupuy Jamain, and Mrs. Jno. Laing. Centre row: Victor Hugo, Kaiserin A. Victoria, Marie Verdier, Innocente Pirola (very pretty bloom), Comte de Raimbaud, Marchioness of Londonderry (bloom much damaged), Fisher Holmes, Madame G. Luizet, La Duchesse de Morny, Her Majesty, A. K. Williams, François Michelin, Xavier Olibo, Marie Van Houtte, S.-M. Rodocanachi, and Catherine Mermet. Front row: Prince Arthur, The Bride, Horace Vernet, Souvenir de S. A. Prince, Duke of Wellington, Margaret Dickson, Lord Bacon, Caroline Kuster, Marie Baumann, Jean Ducher, Madame Cusin, Comtesse de Panisse, Duke of Edinburgh, Anna Olivier, Beauty of Waltham, and Medea. There being at least nine competitors in this class, the 2nd position, which was secured by Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, was also a very coveted one. Indeed, the collection of blooms in this stand was a very fine one. The following varieties were displayed best: Horace Vernet, Duke of Wellington, Ethel Brownlow, Princess of Wales, Mrs. John Laing, Bridesmaid, Ellen Drew, and Comte de Raimbaud were good. Messrs. G. & W. H. BUNCH, Peterborough, were 3rd, and it was an easy matter to point to a number of Roses of much excellence in this stand.

Twenty-four distinct single trusses.—Mr. CHAS. TURNER, Royal Nurseries, Slough, beat all competitors in this class, and staged the following varieties. Back row: Victor Hugo (weak), Marchioness of Londonderry, Xavier Olibo, Mrs. J. Laing, Reynolds Hole, Duchesse de Morny, Prince Arthur, and Her Majesty. Centre row: Marie Baumann, François Michelin, Penelope Mayo, Louis Van Houtte, Ulrich Brunner, Mons. E. Y. Teas, Caroline Testout. Front row: Madame Victor Verdier, Lady Sheffield, Fisher Holmes, Ernest Metz (good), Dr. Andry, Madame Gabrielle Luizet, A. K. Williams, and Gustave Piganeau. Of the nine other exhibitors, Mr. J. SO. MATTOCK, New Headington Nursery, Oxford, succeeded in obtaining 2nd prize, but was closely followed by Mr. RALPH CROSSING, Penarth Nurseries, South Wales.

Twenty-four distinct Trebles.—A very commendable collection of blooms from Messrs. D. PRIOR & SONS, Colchester, secured for the firm premier position, amid very extensive competition. The following trebles were the best: Mrs. Sharman Crawford, La Rosière, Gustave Piganeau, Kaiserin Augusta Victoria, Ulrich Brunner, and Marquise de Litta. Mr. GEO. MOUNT, Canterbury, who was 2nd, exhibited a fine lot of Roses; and Messrs. TOWNSEND & SONS, who were 3rd, had likewise many very meritorious trebles. There were about a dozen competitors in this class.

Extra Class.—This was for twelve distinct single trusses of varieties sent out by Messrs. A. DICKSON & SONS. The 1st prize was taken by Messrs. HARKNESS & SONS, staging the following fine varieties that have been placed into commerce by the above firm: Helen Keller, Earl of Dufferin, Mrs. W. J. Grant, Marchioness of Londonderry, Marquis of Downshire, Muriel Grahame, Mrs. R. G. Sharman Crawford, Marchioness of Dufferin, Marjorie, Ethel Brownlow, Jeannie Dickson and Margaret Dickson. Mr. B. R. CANT, who was 2nd, included Lady Helen Stewart, and in this stand, and that from Messrs. F. CANT & Co., the variety Tom Wood was staged.

TEA AND NOISETTE SECTION.

Twenty-four distinct, single trusses.—Messrs. FRANK CANT & Co., gained the 1st prize in this class, and staged a very fine even lot of blooms of very superior quality. The varieties were:—Back row: Maman Cochet, Madame de Watteville, Souvenir de S. A. Prince, Madame Cusin, Hon. Edith Gifford, Souvenir d'un Ami, The Bride (good). Centre row: Souvenir de Elise, Comtesse de Nadailac, May Rivers, Catherine Mermet (very good), Amazon, Jean Ducher (very pretty specimen), Madame Bravy, Madame A. Etienne. Front row: Comtesse de Panisse, Anna Olivier, Medea, Ethel Brownlow, Francisca Kruger, Ernest Metz, Etolle de Lyon, and Marie Van Houtte. Messrs. D. PRIOR & SONS were 2nd, and included excellent specimens of Madame A. Watteville, Madame Cusin, Ethel Brownlow, The Bride, and others. The collection from Mr. GEO. PRINCE, Oxford, would have taken 1st honours at last year's exhibition, but in the present case it gained 2nd prize only.

Eighteen distinct single trusses.—Messrs. J. BURRELL & Co. were 1st in this case, and again the blooms were above the

average. Ernest Metz, Catherine Mermet, Princess of Wales, Golden Gate, Madame Cusin, Muriel Grahame, Bridesmaid, and Madame de Watteville were all capital. The 2nd prize was taken by Mr. JAS. MATTOCK, New Headington, Oxford, and the 3rd by Messrs. J. TOWNSEND & SONS, Worcester, there being several other competitors.

Eighteen distinct, three trusses of each.—Mr. G. PRINCE had the best trebles in this class, and the exhibits throughout were very satisfactory. Mr. Prince's best were Maman Cochet, Madame Cusin, Comtesse de Nadailac, Anna Olivier, Innocente Pirola, Ethel Brownlow, and Princess of Wales. A very even lot indeed obtained 2nd prize for Mr. B. R. CANT. His collection included superb trebles of Madame Cusin, Luciole, and Madame de Watteville. 3rd, Messrs. D. PRIOR & SONS.

GARDEN ROSES.

Thirty-six bunches, distinct, not fewer than three trusses to a bunch.—Always an interesting section of the show, and frequently the brightest also, are the classes devoted to the display of "garden" Roses, a term used to describe varieties that may not be suitable for exhibition, but which in the majority of instances are the very best wherewith to adorn a garden, furnish a vase, or decorate a room. On this occasion they were exquisite, and it was a splendid collection that won 1st prize in this class for Messrs. PAUL & SON, Cheshunt, the trusses good, and representative of some of the most showy of the class. Conspicuous was a new variety named Dawn, with uncommonly large semi-double flowers of a soft and beautiful tint of rose colour, the foliage being also broad and vigorous-looking. Messrs. COOLING & SONS, Bath, though 2nd, had a most attractive exhibit in this class.

Eighteen bunches, distinct varieties, not fewer than three trusses to a bunch.—This class was won by Mr. CHAS. TURNER, Royal Nurseries, Slough. Amongst the varieties we noticed several of the Polyantha section, also the showy Bardon Job, Perle d'Or, Turner's Crimson Rambler, and others equally well known. Mr. J. SO. MATTOCK, who was 2nd, included a larger number of the Noisette Roses; 3rd, Messrs. TOWNSEND & SONS.

OPEN CLASSES.

Bunches of Roses.—This class is for bunches of Roses as one would cut them for furnishing a vase. There are twelve bunches, distinct, not more than seven trusses to a bunch. Mr. J. SO. MATTOCK was 1st, and showed Margaret Dickson, Ulrich Brunner, Violet Bouyer, Louis Van Houtte, Mlle. de Watteville, Comtesse de Nadailac, Duchess of Bedford, Madame Hoste, Horace Vernet, Innocente Pirola, Anna Olivier, and Marie Van Houtte. These bunches were arranged—faced slightly—so as to display the flowers fully. Messrs. PAUL & SON, Cheshunt, were 2nd; and Mr. R. CROSSING, Penarth Nurseries, 3rd, there being two other collections staged.

Twelve trusses of Hybrid Tea, not fewer than nine varieties.—A stand containing some excellent blooms from Messrs. D. PRIOR & SON obtained 1st prize; Marquise de Litta, Caroline Testout, Kaiserin A. Victoria, La France, Captain Christy, Mrs. W. J. Grant, White Lady, Lady Mary Fitzwilliam, La Fraicheur, and Auguste Guinolaeseau were the varieties shown. The 2nd prize was awarded to a collection of small-r, well-formed blooms, from Messrs. A. DICKSON & SONS; and Messrs. FRANK CANT & Co. were 3rd. If the term hybrid "Teas" is not a very happy one, it is the name given to a class which undoubtedly includes some of the prettiest Roses.

Best Stand of Yellow Roses.—The best twelve blooms of any yellow Rose were from Mr. GEO. PRINCE, who had very good specimens of the peculiarly distinct and beautiful variety, Comtesse de Nadailac; Messrs. J. TOWNSEND & SONS, who were 2nd, were followed by Mr. B. R. CANT, with good specimens of Madame Hoste.

Best Stand of White Roses.—Messrs. ALEX. DICKSON & SONS were 1st with beautiful examples, of fine form, of the variety Kaiserin Augusta Victoria; Mr. B. R. CANT following with Marchioness of Londonderry.

Best Stand of any Tea or Noisette Rose.—The unique Madame Cusin gained the 1st prize for Mr. B. R. CANT, who had a dozen magnificent specimens; Mr. GEO. PRINCE was 2nd; and with Madame de Watteville, Mr. FRANK CANT was 3rd.

Best Stand of Crimson Roses.—The 1st prize was won by the variety A. K. Williams, from the nurseries of Messrs. ALEX. DICKSON & SONS. Ulrich Brunner, from Messrs. D. PRIOR & SONS, was 2nd; and Messrs. TOWNSEND & SONS, who were 3rd, showed the same variety as the winners.

The best specimen of a Dark Rose.—This was seen in a stand from Messrs. HARKNESS & SONS, who had the velvety crimson variety Horace Vernet. The same variety won 2nd place for Mr. B. R. CANT; and Messrs. A. DICKSON & SONS were 3rd.

Twelve single trusses of any light-coloured (other than white) Rose.—The excellent variety Mrs. Jno. Laing was again much the best in this class. It was shown by Messrs. TOWNSEND & SONS; Mr. B. R. CANT and Messrs. D. PRIOR & SONS, who were 2nd and 3rd respectively in each case, staged Her Majesty.

Twelve single trusses of any new Rose.—The new Roses were of more than usual interest, some being exceptionally good and promising, while there were no fewer than eleven new varieties staged for the Gold Medal, and cards of commendation. Messrs. A. DICKSON & SONS, Newtownards, Ireland, were well in front with their grand Hybrid Tea, Mrs. W. J. Grant; Messrs. HARKNESS & SONS following with Helen Keller (also an introduction from Newtownards), and Messrs.

F. CANT & Co. with their new H.P. Mrs. Frank Cant. There was a good box of Maman Cochet from Messrs. PRIOR & SON Colchester. Nine lots were staged.

Twelve new Roses distinct.—Messrs. A. DICKSON & SONS, Newtownards, were a long way ahead, and staged, we believe, varieties only of their own raising. Countess of Caledon, Tom Wood, Lady Clamorris, Ulster, Killarney, Eileen, Mrs. W. J. Grant, Mrs. Mawley, Bessie Brown, First Cross, Mrs. Grahame, and Daisy: one of the best boxes of new Roses we have seen. Messrs. F. CANT & Co. were 2nd, having Tom Wood, Helen Keller, and Sylph in good form; and Mr. B. R. CANT, Colchester, 3rd.

Three single trusses of any new seedling-Rose or distinct sport.—The following were staged for the Gold Medal. F. W. Sanford, a pale blush H.P. from Messrs. CURTIS, SANFORD & Co., Torquay. Ulster, a new H.P. from Messrs. A. DICKSON & SONS, Newtownards, secured the Gold Medal. This is a Rose of immense substance, vigorous in growth, and with smooth wood. Its main colour is the deep shade found in Caroline Testout, but the whole flower is quite distinct. A card of Commendation was awarded to a deep scarlet single, named Royal Scarlet. Messrs. DICKSON & SONS also staged Countess of Caledon and Mrs. Mawley (a little too much like a pale or badly-coloured Maman Cochet). Messrs. G. PAUL & SONS, Cheshunt, put up their H. P. Rev. Allen Cheales, in fair form, but not so good as we saw it at Portsmouth; evidently a free grower and bloomer, with a combination of the colours found in Marquise de Litta and Madame Cusin. Mr. RUMSEY, Waltham Cross, showed H.P. Mrs. Rumsey, a pretty clear pink that is destined to become one of our most popular decorative Roses, especially for autumnal cutting. Plants of Madame Berard, with variegated foliage came from Messrs. G. BUNYARD & Co., Maidstone, but were at once passed over, as no flowers were shown. A Hill Gray, from Messrs. PRINCE, Oxford, although of not quite the same growth, reminds one too strongly of an indifferent Comtesse de Nadailac. The same may be said of Mrs. Jefferies, from Messrs. JEFFERIES & SONS, Cirencester, the growth and blooms far too much resembling Maréchal Niel in some of its stages. H. P., R. B. Cator, from Messrs. COOLING & SONS, Bath, is promising; somewhat after the colour of H. Keller, but more cupped, and distinct in growth. Mrs. F. Cant reminds one of a very pale Madame Gabrielle Luizet, but was exceptionally well shown in the class for twelve new Roses, and again in twelve of any new variety.

A particularly promising new Rose named Killarney, came from Newtownards; it appears to be a hybrid Tea, of grand size, substance, and form; a clear, soft, salmony-peach, with silvery edges, and most distinct.

Single-flowered Roses, nine bunches, distinct.—Messrs. COOLING & SONS, Bath, were 1st, and included the following varieties:—Rugosa, macrantha, Green Mistle, Paul's Single White, Cooling's Single Crimson, Himalaya, Lucy Ashton, Pissardi, and Lucida; Messrs. PAUL & SONS, Cheshunt, who were 2nd, included a bunch of R. rubrifolia; and Miss MELLISH of Hodssock Priory, Worsop, 3rd.

Roses suitable for Buttonholes.—These exquisite Roses were well shown by Mr. J. SO. MATTOCK, in a class for not fewer than six varieties in twelve bunches. Those shown were the following, and, without exception, all of them are splendid for the purpose as the bud commences to open:—Comtesse de Nadailac, M. Pirola, Ma Capucine, Niphetos, Amazon, Anna Olivier, Madame Falot, Hon. E. Gifford, Madame Hoste, Madame de Watteville, Rubens (beautiful), and Gustave Piganeau; 2nd, Mr. GEO. PRINCE; and 3rd, A. G. GREEN, Esq., Colchester.

AMATEURS.

All through the amateurs' classes the competition was both numerous and keen, scarcely a bad flower was to be found; while in the main classes, the average standard was even ahead of that found among the largest trade growers.

The Champion Trophy and Replica for thirty-six single trusses, distinct, was open to all amateurs, and brought out five grand stands: E. B. LINDSELL, Esq., Bearton, Hitchin, winning with Ulrich Brunner, Charles Lefebvre, Marchioness of Londonderry, Marchioness of Dufferin, Gustave Piganeau, Her Majesty, Alfred Colomb, S.-Marie Rodocanachi, Comte de Raimbaud, Mrs. W. J. Grant, Duc d'Orleans, Mrs. John Laing, Duchess of Bedford, Innocente Pirola, Horace Vernet, Muriel Grahame (Silver Medal), Prince Arthur, Madame de Watteville, Fisher Holmes, Catherine Mermet, Earl of Dufferin, Madame Cusin, Sir Roland Hill, Merville de Lyon, Louis Van Houtte, K. A. Victoria, Alfred K. Williams, Gabrielle Luizet, Madame Hausmann, La France, Dr. Sewell, Madame Hoste, Madame Victor Verdier, Comtesse de Nadailac, Dr. Andry, and François Michelin. C. J. GRAHAM, Esq., Wyrolands, Leatherhead, was 2nd, and had superb blooms of White Lady, Charles Lefebvre, Xavier Olibo, K. A. Victoria, Horace Vernet, and Fisher Holmes; H. V. MACHIN, Esq., Gateford Hill, Worsop, being 3rd.

In this class the Rev. J. H. PEMBERTON staged a grand lot, but was disqualified for duplicating Earl of Dufferin; an unfortunate oversight.

For thirty-six singles, open to all amateurs.—Mr. E. B. LINDSELL was again in front, his twelve best flowers being Ulrich Brunner, A. K. Williams, Gustave Piganeau, Marie Baumann, Captain Hayward, Catherine Mermet, E. Y. Teas, Innocente Pirola, Alfred Colomb, Horace Vernet, and K. A. Victoria. T. HONNS, Esq., Eaton, Bristol, was 2nd, with a very neat and clean stand, but flowers much smaller than Mr. LINDSELL's; A. TATE, Esq., Downside, Leatherhead, 3rd. No fewer than nine competed in this class.

For eight trebles, distinct.—Eleven lots were staged, Mr. E. B. LIND-ELL again proving victorious; the varieties were Earl of Dufferin, Marchioness of Londonderry, Horace Vernet, Her Majesty, A. K. Williams, Mrs. John Laing, Ulrich Brunner, and Mrs. W. J. Grant; the Rev. J. H. PEMBERTON, Havering-atto-Bower, and A. TATE, Esq., Leatherhead, followed.

For twelve of any Rose except a Tea or Noisette (seven competed).—H. V. MACHIN, Esq., Worksoop, winning with good examples of Gustave Pigeon; S. GURNEY FOWLER, Esq., Glebelands, Southwoodford, 2nd, with Her Majesty; and Rev. J. H. PEMBERTON 3rd, with Mrs. John Laing.

Open only to growers of fewer than 200 plants of exhibition varieties.—Twelve competed in the class for twenty-four distinct varieties, S. S. BEROE, Esq., Braybury, Stevenage, Great Wooden, winning. His best flowers were Maurice Bernardin, Sénateur Vaisse, Her Majesty, Alfred Colomb, Catharine Mermet, and A. K. Williams. Mr. E. MAWLEY, Berkhamsted, was a remarkably close 2nd, showing Sénateur Vaisse, Dupuy Jamain, S.-M. Rodocanachi, Duke of Fife, Charles Lefebvre, Innocente Pirola, and others in grand form. R. E. WEST, Esq., Reigate, being 3rd.

Six distinct trebles.—Mr. E. MAWLEY won with some good blooms of Gabrielle Luizet, Ulrich Brunner, Marie Finger, Mrs. John Laing, Horace Vernet, and Dupuy Jamain. G. P. BURNAND, Esq., Hill Grange, Reigate, being 2nd; and CONWAY JONES, Esq., Huicelcote, Gloucester, 3rd.

Nine blooms of any variety except Tea or Noisette.—Nine competed in this class. O. G. ORPEN, Esq., Colchester, was a good 1st, with the finest box of K. A. Victoria we have seen, among which was the Silver Medal flower for a H.P. or H.T. bloom. E. M. BETHUNE, Esq., Horsham, 2nd, with Marie Baumann; and Mr. A. SLAUGHTER, Steyning, 3rd, with Charles Lefebvre.

For growers of fewer than 1000 plants of exhibition varieties.—For nine varieties, distinct, Mr. G. MOULES, Hitchin, won from eleven competitors, his blooms being Ulrich Brunner, Souvenir d'Elise Vardon, C. Mermet, C. Testout, Earl of Dufferin, François Michelon, Her Majesty, Beauty of Waltham, and Comte Raimbaud. M. WHITTLE, Esq., 56, Belgrave Avenue, Leicester, was a good 2nd; and A. F. PERKINS, Esq., Holmwood, Surrey, 3rd.

Six distinct trebles.—G. W. COOK, Esq., The Briars, North Finchley, won with good blooms of Mrs. J. Laing, Captain Hayward, La France, Ulrich Brunner, General Jacqueminot, and K. A. Victoria, in a strong class. R. H. LANGDON, Esq., Raymead, Hendon, 2nd; and M. WHITTLE, Esq., Leicester, 3rd.

For growers of fewer than 500 plants.—Here also there were eleven competitors in the class for nine blooms, distinct, R. F. HOBBS, Esq., Bromyard Road, Worcester, winning with Catharine Mermet, Heinrich Schultheiss, Ulrich Brunner, Maréchal Niel, A. K. Williams, Victor Verdier, Lady Mary Fitzwilliam, S.-M. Rodocanachi, and Comtesse de Nadailac. R. W. BOWYER, Esq., Halfway Cottage, Hertford, was 2nd; W. KINGSTON, Esq., 52, Gray Street, Bedford, 3rd.

Six single trusses, distinct.—No fewer than fourteen competed. A. MUNT, Esq., Templewood, Slough, winning with good flowers of Ernest Metz, The Bride, K. A. Victoria, A. K. Williams, Her Majesty, and Innocente Pirola. E. R. SMITH, Esq., Melford Lodge, Muswell Hill, was 2nd, and G. A. HAMMOND, Esq., Cambrian House, Burgess Hill, 3rd.

For four trusses, three of each, there were nine lots. H. P. LONDON, Esq., Shenfield, near Bruntwood, winning with Victor Hugo, C. Testout, La France, and Mrs. John Laing. J. PARKER, Esq., The Croft, Old Headington, was 2nd, and R. F. HOBBS, Esq., Worcester, 3rd.

A Silver Challenge Cup was presented by C. J. GRAHAME, Esq., in the above divisions, for an extra class of twelve distinct varieties. W. KINGSTON, Esq., 52, Gray Street, Bedford, won from thirteen competitors, his varieties being Xavier Olibo, A. Colomb, Souvenir d'Elise Vardon, Catharine Mermet, Ulrich Brunner, Louis Van Houtte, Mrs. John Laing, Camille Bernardin, Etienne Lovet, General Jacqueminot, La France, and A. K. Williams. Rev. C. JOHNSON, Capel St. Mary, Ipswich, was a very close 2nd, and M. WHITTLE, Esq., Leicester 3rd.

Six blooms of any Rose except Tea or Noisette.—Seventeen boxes were staged in this class. G. W. COOK, Esq., The Briars, North Finchley, winning with Mrs. John Laing; J. C. TRUMAN, Esq., Oaklands, Swanley, 2nd with Her Majesty; and R. W. BOWYER, Esq., Halfway Cottage, Hertford, with Caroline Testout.

The Silver Cup offered by Mr. C. J. GRAHAME for six single trusses of Roses sent out by Messrs. DICKSON & SONS, Newtownards, was easily won by E. B. LINDSELL, Esq., with Muriel Grahame, Helen Keller, Marchioness of Londonderry, Marchioness of Dufferin, Earl of Dufferin, and Mrs. R. G. SHARMAN CRAWFORD. Rev. J. H. PEMBERTON, Havering, was 2nd; and A. SLAUGHTER, Esq., Steyning, 3rd.

A Piece of Plate offered for six Roses distinct, grown by members who have never before won a prize at a National Rose Society's exhibition, was secured by the Rev. C. JOHNSON, Capel St. Mary, Ipswich; J. C. TRUMAN, Esq., Oaklands, Swanley, 2nd; and F. BAUER, Esq., Wood Green, N., 3rd. For a similar number, open only to amateurs joining the National Rose Society since the last Crystal Palace show, there were a ven lots, the 1st going to S. S. BEROE, Esq., Braybury, Stevenage, for Mrs. J. Laing, Prince Arthur, Madame Victor Verdier, Charles Lefebvre, General Jacqueminot, and Paul's Early Blush. Miss JESS, Firbeck Hall,

Rotherham, and Rev. R. POWLEY, Warminster, were 2nd and 3rd respectively.

The Piece of Plate, presented by E. MAWLEY, Esq., for six distinct Roses, grown within eight miles of Charing Cross, brought out eight competitors. G. W. COOK, Esq., The Briars, North Finchley, winning with Captain Hayward, Mrs. John Laing, Caroline Testout, Comtesse d'Oxford, Duke of Wellington, and La France. Mr. J. BATEMAN, Rose Vale, Archway Road, N., was a good 2nd; and E. R. SMITH, Esq., Melford Lodge, Muswell Hill, 3rd.

Six New Roses.—The Rev. J. H. PEMBERTON won 1st, showing good blooms of Charlotte Guillemot, Mrs. Crawford, Helen Keller, Captain Hayward, Marquise de Litta, and Marchioness of Downshire. O. G. ORPEN, Esq., West Bergholt, Colchester, 2nd; and Mr. J. BATEMAN, 3rd.

TEA AND NOISETTE SECTION.

These were very numerous, and in most cases the blooms were more free from bruised and discoloured outside petals than we have seen them for several seasons.

Nine competed for the Challenge Trophy and Replica offered for eighteen distinct singles, O. G. ORPEN, Esq., West Bergholt, Colchester, winning with a grand stand, consisting of Maman Cochet, Madame Hoste, Souvenir d'Elise Vardon, Souvenir d'un Ami, The Bride, Ernest Metz, Souvenir de S. A. Prince, Innocente Pirola, Comtesse de Nadailac, Madame Cusin, Cleopatra, Marie Van Houtte, Catharine Mermet, Medea, Maréchal Niel, Sylph, Caroline Kuster, and Madame de Watteville. C. J. GRAHAME, Esq., Wyrelands, Leatherhead, had grand flowers of Etiole de Lyon, Catharine Mermet, The Bride, Madame de Watteville, Niphotos, and Caroline Kuster, in his 2nd prize stand. Dr. L. P. BUDD, Bath, was 3rd.

For twelve distinct singles, ten competed, Mr. HARRIS, gr. to E. M. BETHUNE, Esq., Denne Park, Horsham, winning with Madame Cochet, F. Kruger, Madame Cusin, Medea, Catharine Mermet, The Bride, Marie Van Houtte, Etiole de Lyon, Ethel Brownlow, Madame Margottin, Bridesmaid, and Caroline Kuster, in good form. The Rev. H. BERNERS, Harkstead Rectory, Ipswich, was 2nd; and Dr. L. P. BUDD, 8, Gay Street, Bath, 3rd.

The Townsend-Boscawen Memorial Plate was secured by C. J. GRAHAME, Esq., against eight competitors. There was not a faulty flower among his trebles of Madame de Watteville, Caroline Kuster, Maman Cochet, Innocente Pirola, F. Kruger, Catharine Mermet, Madame Cusin, and The Bride. Dr. L. P. BUDD, Bath, 2nd; and O. G. ORPEN, Esq., Colchester, 3rd.

For nine blooms of any Tea or Noisette.—E. M. BETHUNE, Esq., Horsham, won with Catharine Mermet; C. J. GRAHAME, Esq., was 2nd, with Madame Cusin; and O. G. ORPEN, Esq., was 3rd, with the same variety.

For growers of fewer than 500 plants of exhibition Teas and Noisettes.—There were eight competitors for twelve distinct singles, Mr. J. PARKER, The Croft, Old Headington, winning; the Rev. J. H. PEMBERTON, 2nd; and CONWAY JONES, Esq., Huicelcote, Gloucester, 3rd.

For nine singles.—Miss BAKER, Holmfels, Reigate, was ahead; P. G. BURNAND, Esq., Reigate; and E. MAWLEY, Esq., Berkhamsted following.

For growers of fewer than 200 plants.—The class nine single trusses, distinct, found Rev. A. CECIL JOHNSON, Capel St. Mary, Ipswich, well ahead; Mr. G. MOULES, Hitchin, 2nd; and Mr. J. PARKER, The Croft, Old Headington, 3rd.

In the class for six singles, distinct, nine competed, Rev. F. R. BURNARD, Berrington Rectory, Shrewsbury, winning from M. WHITTLE, Esq., Leicester, and R. W. BOWYER, Esq., Halfway Cottage, Hertford.

For the Piece of Plate offered for four trebles, distinct, twelve competed, Mr. J. PARKER winning with The Bride, Madame Cusin, Marie Van Houtte, and Catharine Mermet, in good form; A. SLAUGHTER, Esq., Steyning, was 2nd; and C. JONES, Esq., Huicelcote, Gloucester, 3rd.

Six single trusses of any one variety.—F. HOBBS, Esq., Bromyard Road, Worcester, won with Catharine Mermet; Mr. J. PARKER, Old Headington, 2nd, with the same variety; and Mrs. E. CHOFF MURRAY, Ryde, 3rd, with Edith Gifford.

Messrs. Paul & Son's Piece of Plate for six bunches of distinct varieties was won by O. G. ORPEN, Esq., Colchester, for F. Kruger, Madame Hoste, Medea, Madame Cusin, A. Olivier, and Marie V. Houtte in good style. S. GURNEY-FOWLER, Esq., South Woodford, was 2nd; and Mr. J. PARKER, Old Headington, 3rd.

GARDEN ROSES.

The Silver Cup, presented by the Right Hon. Lord PENZANCE, for eighteen bunches of distinct varieties was won by H. V. MACHIN, Esq., Gatefold Hill, Worksoop with Ma Piquette, Madame Pernet Ducher, Red Damask, Rosa Mundi, Perle d'Or, and Laurette Messing, the best half-dozen bunches. A. TATE, Esq., Leatherhead, was 2nd, and had Mochata nivea, Moss cristata, and Gustave Regis in capital form.

The piece of plate for six bunches was secured by Mrs. A. F. PERKINS, Oak Dene, Holmwood, Surrey, Madame Plantier, Camens, Marquise of Salisbury, Madame C. Guinoleau, Madame Pernet Ducher, and Triomphe de Pernet Père being the varieties. F. W. CAMPION, Esq., Colley Manor, Reigate, was 2nd; and Rev. J. H. PEMBERTON, 3rd.

DECORATIVE SECTION.

Table decoration of Cut Roses and suitable greenery.—This was open only to lady members of a family of a subscriber to the Society, and was described as the Victorian Reign Com-

memoration Class. The 1st prize was won by Mrs. O. G. ORPEN, whose exhibit was an object-lesson in how not to spoil such efforts by introducing too much variety, or by too profusely furnishing the table. The arrangement of Noisette Roses, here and there a bloom of a Polyantha variety, and a little Maidenhair Fern, was as simple as pleasing.

Vase of Cut Roses, with cut foliage &c.—O. G. ORPEN, Esq., was 1st, with a vase lightly furnished with pink and white Roses, and a little Adiantum cuneatum Fern, &c.

MEDAL ROSES.

In the amateurs' divisions, the Silver Medals were awarded as follows: The best H.P. or H.T. was Kaiserin Augusta Victoria, shown by O. G. ORPEN, Esq.; and the new Rose Muriel Grahame (grand), shown by E. B. LINDSELL, Esq., was the best Tea or Noisette.

Among nurserymen, the best H.P. was a perfect but not extra large bloom of the well known Horace Vernet, in Messrs. HARKNESS & SON'S stand of seventy-two blooms distinct; and Madame Cusin, from Mr. B. R. CART, was the best Tea or Noisette. This was a fine bloom, but not so highly coloured as the variety sometimes is.

MISCELLANEOUS EXHIBITS.

Messrs. W. PAUL & SON, Waltham Cross, Herts, made a display with Roses in pots, and a fine lot of cut blooms. Many of the varieties represented have been raised by this firm during the present reign, and are well known, and some extremely popular. Spenser H.P., Emperor Alexander of Russia, 8 ar of Waltham H.P., bright purple-crimson, and the new Waltham Standard and Aurora, in company with many others, were shown as good general blooms. The plants in pots were young and dwarf, usually carrying about half-a-dozen blooms. An interesting exhibit.

Messrs. JARMAN & Co., Chard, Somerset, showed Roses; and Messrs. CHEAL & SONS, Crawley, Violas and Pansies, together with blooms of other hardy plants. Mr. FORSTER, of the Brookhampton Nurseries, made a display with Sweet Peas; and Messrs. WALLACE & Co. of Colchester, exhibited flowers of varieties of Lilies and Calochortis.

Messrs. JNO. LAING & SONS, Forest Hill, London, S.E., had a gigantic exhibit of plants, including, of course, a capital display of their tuberous-rooted Begonias, double and single. In addition to these, however, there were many Palms, 8 feet to 10 feet high, arranged upon the seats behind the dwarfier plants, also many good Caladiums, Souvenir de la Malmaison Carnations, Lilliums, and pretty foliage plants. Upon one side of these plants the same firm had an excellent lot of hardy herbaceous flowers in bunches, which made a gay picture.

Mr. M. PRITCHARD, Christchurch, had a few bunches of hardy herbaceous flowers also, the whole of them bearing evident indications of first class culture.

Messrs. A. W. YOUNG & Co., Stevenage Nurseries, Herts, were the contributors of yet another collection of similar hardy flowers so much in season at the present time. Most of these exhibits were arranged upon the temporary seats erected under the Royal Box, and immediately opposite to the great organ.

EALING HORTICULTURAL.

JUNE 30.—No more delightful place can be selected in which to hold a flower show than Gunnersbury Park, and this was the thirty-third exhibition of the society. Ealing, in respect of high-class exhibits, is suffering from the breaking-up of small estates, and the setting of them out for building operations, so there is a falling off both in the quantity and quality of the exhibits at the annual exhibition, more especially as the large specimens disappear, and are not replaced. As it was, five tents were required to take the exhibits which were forthcoming.

Roses are a leading feature, and the Jubilee Silver Cup offered for twenty-four blooms was won by Mr. C. TURNER, they were a fine fresh full lot of blooms, brilliant red H. P.'s predominating. There was a fair display of locally grown Roses, but the great heat in the tents soon told upon them.

Messrs. CHARLES LEE & SON, Messrs. JAMES VEITCH & SONS, and Messrs. E. SPOONER & SONS all contributed collections of Roses not for competition.

As far as plants are concerned, groups for effects take a leading place, the best of the large ones came from Mr. W. Roberts, gr. to J. HARRIS, Esq., Ealing; Mr. C. EDWARDS, gr. to C. TAYLOR, Esq., Ealing, was 1st with the smaller one. Specimen plants were of fair size, and shown in several classes; but with the exception of a good flowering piece of Lagerstromia indica and Datura suaveolens from Mr. C. Long, gr. to E. P. OAKSHOTT, Esq., Ealing, they called for no special remark. There were some very good specimen Gloxinias, good tuberous-rooted Begonias and Fuchsias, all well grown and bloomed. In the way of foliated plants there were well-grown Adiantums from two or three exhibitors.

Of miscellaneous productions there were fine and striking groups of plants from Mr. G. REYNOLDS, Gunnersbury Park Gardens; and Mr. HUDSON, of Gunnersbury House; also one of the same character from Messrs. FROMOW & SONS, Turnham Green; and, in addition, a good one of Japanese Maples. Messrs. C. LEE & SON had a large group of pictorial trees and shrubs, and Mr. C. TURNER, Royal Nursery, Slough, several very good specimen Pelargoniums, show and fancy which were greatly admired.

Fruit was fairly good, but by no means largely represented.

Vegetables were not up to the usual mark, owing, no doubt, to the earlier period on which the show was held; still, good samples were staged.

As is usual, a tent was set apart for table-decorations, shown in several classes. Chief among them were some exquisite bouquets and baskets by Mrs. H. B. SMITH, a well-known local florist.

The cottagers' productions from allotment-gardens were very good for the early period at which the show was held.

CROYDON HORTICULTURAL.

JUNE 30.—This was, as usual, an excellent show, the cut Roses being of especially good quality, and also plentifully shown.

NURSERMEN.

There were five competitors in the forty-eight varieties class. Messrs. HARKNESS & SONS, Bedale and Hitchin, leading Mr. R. R. CANT and Messrs. PRIOR & SONS, both of Colchester. The blooms here were particularly bright and clean. The winners for twenty-four varieties, shown in triplets, were 1st, Mr. B. R. CANT; Messrs. PRIOR & SONS, and Messrs. HARKNESS & SONS.

Messrs. G. & W. H. BURNS, Peterborough, were in front of Mr. G. W. PIPER, Uckfield, for a class of twenty-four varieties. In the class for eighteen Teas or Noisettes, all the winning stands came from Colchester, Messrs. PRIOR & SONS, F. CANT & Co., and B. R. CANT winning in the order named. Messrs. F. CANT & Co. were 1st with Kaiserin Augusta Victoria in twelve of any H. P. or H. T. class; and Mr. B. R. CANT for twelve Teas or Noisettes, with Madame Cusin.

AMATEURS.

The competition for the new challenge cup, offered for thirty-six distinct varieties, was keen, but Mr. E. B. LINDSAY, Hitchin, was an easy winner, with superb flowers, including on his stand the two silver medal blooms, viz., Her Majesty, the best H. P., and Mrs. J. LING, the best flower of that variety. T. B. HAYWOOD, Esq., Woodhatch Lodge, Reigate, was 2nd in the cup class. Mr. Mease, gr. to A. TATE, Esq., Leatherhead, was 1st for a good lot of twenty-four flowers of distinct varieties; and Mr. Harris, gr. to E. M. BARNES, Esq., Denne Park, Horsham, was 1st for eighteen Teas or Noisettes.

For growers of less than 2000 plants, Mr. E. MAWLEY secured 1st for twelve distinct, and also for twelve Teas and Noisettes, Mr. HARRIS being 2nd in each class. Mr. J. W. COOK, The Briers, North Finchley, Mr. W. D. FRESHFIELD, The Wilderness, Reigate, and Mr. M. HODGSON, Shirley, were very successful among amateurs. The Challenge Cup and the National Rose Society's Silver Medal for local growers, were secured by Mr. A. C. GIFFORD, South Norwood.

Plants and Groups.—Mr. Mills, gr. to F. G. LLOYD, Esq., Combe House, Croydon, won for twelve table-plants, six Dracaenas, and six Caladiums, for some grand Selaginellas, and for twenty-four varieties of hardy cut-flowers; Mr. C. J. SALTER, gr. to T. R. HAYWOOD, Esq., Reigate, winning for twenty-four stove and greenhouse varieties.

One of the most successful exhibitors in this division was Mr. Harris, gr. to PHILIP CROWLEY, Esq., Waddon House, Croydon, who was well ahead for groups, for nine ornamental foliage plants, for six stove and greenhouse plants in bloom, for six exotic Ferns, and for specimen foliage and flowering plants.

Vegetables were particularly good throughout.

Non-competitive exhibits were very numerous, and of high quality, the best being Begonias, Caladiums, and herbaceous flowers, from Messrs. J. LAING & SONS, Forest Hill; herbaceous flowers from Mr. BOX, Messrs. CHEAL & SONS, and Mr. CHARLTON; while Messrs. WALLACE & Co. staged a grand lot of Calochortus and Lilies.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 1.—The exhibits tabled on the Coal Exchange on the above date were choice and interesting throughout, and all bore marks of good cultivation. The committee consisted of W. Thompson, Esq., Walton Grange (Chairman), and Messrs. W. A. GENT (Hon. Sec.), G. S. BALL, J. ANDERSON, S. GRATRIX, H. GREENWOOD, G. LAW-SCHOFFIELD, A. WARBURTON, Wm. STEVENS, P. WEATHERS, E. J. SIDEBOTHAM, Robert JOHNSON, and J. CHARLESWORTH.

The Chairman (Mr. Wm. Stevens, gr.) put up the following plants: *Odontoglossum crispum giganteum* (Award of Merit). This was a very large flower, with chestnut blotches on a clear white ground, the sagittate lip being similarly adorned; the spike carried about a dozen flowers, rather open in the segments, and thus depriving it of the premier award. *Cattleya tenebrosa* Charlesworthi (Award of Merit) is a striking-coloured flower, the rich cinnamon-coloured segments a little elongated, contrasting well with a deep maroon-shaded lip, very prominent indeed from its oblong blade. The same exhibitor had *Laelia purpurata* Stevensii with a good dozen flowers on it, rather intra coloured lip, but depreciated in the strap-form of its segments. In addition was a fine grown and flowered piece of *Odontoglossum Coradinii* Waltonense (Award of Merit). This is a much broader-limbed flower than the normal form, suggesting natural hybridisation; the lip is panduriform; the spike had fifteen superb flowers on it. Mr. STEVENS also put forward a *Cattleya Rex* of striking

colour, greenish-white, with the convolute division of lip of saffron colour, quite a departure from the normal type; as it was only shown as a cut flower, it received no award.

Mr. W. A. GENT, Brooklands, put up a small healthy piece of *Brassavola Digbyana*, with a single flower, which the committee requested to be brought up again. The lip had an unusually deep fringe. HUGH LOW & Co., Clapton, had *Cypripedium* × Mrs. E. V. Low (Award of Merit). The parentage was *C. niveum*, with another unknown. Judged by the white ground standard, with the ruby spotting and the form of the segments, it partook of the same character as *C. insignis*, and the lip resembles that of *C. niveum*, and the leaves indicate the *insignis* type. The two committees (London and Manchester) took the same view as to its intrinsic merits (see *Gardener's Chronicle*, p. 10, col. c).

A. WARBURTON, Esq., Vine Lodge, Haslingden (Mr. Tom Lofthouse, gr.), exhibited the choicest lot of the day, viz., *Cattleya tenebrosa* Victor Warburton (First-class Certificate). The well-formed segments are self-coloured, of a captivating pale shade of saffron, with a roundly ovate entire lip, rich purple towards the orifice of the tube, with the lines shading out to the base of the column, and running from the solid blotch towards the extremity of the blade, stopping short at the margin, which is white—altogether a pretty combination. The next most important plant was *Cattleya Mossii* bellissima (First-class Certificate), an albino of fine form and good substance, the limbs pure white, the lip with a fine dash of yellow distributed up to the column base, and that rests on a white ground colour, the only drawback to the flower being a slight semblance of flushing at the front of the lip. The same exhibitor had *Cattleya Mossii* Reineckiana (Award of Merit), with six fine flowers in true character. The lip has fine stencillings of rosy-purple, and the yellow stained orifice adds to its merits. Another albino of the *Mossii* type, named Warburtoni, received an Award of Merit.

WALTER C. CLARKE, Esq., Sefton Park, Liverpool, exhibited *Cypripedium* × *Lawreli* (Award of Merit). This is one of the best of the bellulatum section, with its peduncle elongated, and showing the brilliant admixture of colour of the famed Lawrenceanum much more pronounced, in having black orbicular spots. It was a little past its best, or it might have fared better, as being shown here for the first time. The same grower had also *Cattleya gigas* Sanderiana, with a crowd of brilliant flowers on it.

THOMAS STATTER, Esq., Stand Hall (Mr. R. Johnson, gr.), had a finely-grown piece of *Cattleya gigas*, with very large flowers (Award of Merit). The white eyes at the orifice, with the fine crimson-purple on the lip, solid from base to extremity, makes this one of the champion *Cattleyas* in our whole list. The same exhibitor had *Laelio-Cattleya Hippolyte* (Award of Merit). The colour of this hybrid (Nankin-yellow) makes it a pleasing addition to our list of real hybrids, possessing both desirable colour and form.

G. SHORLAND BALL, Esq. (gr. Mr. A. Hay), had several good things, the best being *Cypripedium Harrisoni* superbum (Award of Merit). This is an improvement in form and colour, and is one of the best of the novelties. Another pretty and distinct flower was *Cypripedium Curtisi* viride.

SAMUEL GRATRIX, Esq., Whalley Grange (gr. Mr. R. McLeod), showed a well-cultivated plant, bearing four extra fine flowers, of *Cypripedium grande atratum* (Award of Merit). In size, substance, and beauty of colour of the flowers, it excels the normal form; the dorsal and inferior sepals are of shaded bronzy-green, with bold roseate lines, while the linear petals, much elongated, are of greenish cast, distinctly edged with claret, and adorned with glandular hairs; the pouch is ruby, with a highly ornamental interior of white spots and blotches, interspersed with carmine; and the long pedicels springing from the peduncle make this a most effective and distinct *Lady's-allipier*.

HARRY GREENWOOD, Esq., Highfield (gr. Mr. Spurr), showed a finely cultivated plant of *Cypripedium Elliottianum*, possessing two spikes, each three flowered, resembling *C. Rothschildianum*—Indeed, there is no difference between them. As the committee has had *Rothschildianum* before them it was decided to give a Cultural Commendation to this plant. A form of *Dendrobium* from New Guinea was shown from this exhibitor, it was dwarfier in habit than *D. superbiens*, and relegated as *Gouldianum*. It is more interesting than beautiful.

Messrs. CHARLESWORTH & Co., Heaton, put up a new hybrid *Cattleya* under the name of *velutina-elegans*. It is a good gain, as showing the intermixture of *granulosa* and *Laelia elegans*. The segments are purely those of *C. granulosa*, but the blade of the lip is coloured like that of *elegans*, and shows the broken outline of that choice species; it has four good flowers on it. It was voted an Award of Merit. It ought to be christened *Laelio-Cattleya velutina elegans*.

Messrs. COWAN & Co., Garston, had several plants; the best flowers (not on the plant, however) were a *Cattleya Mossii*, called Wagneri, but the slight pink flushing on the lip barred that name; the yellow was grandly in evidence. The plant of *Cattleya Warneri* was very brilliant, but it was past its best.

Archdeacon RAWSTONE sent a good *Cattleya Mossii*; D. GILMORE, Esq., sent *C. Mossii* chrysotoxa, and Captain SCHOFFIELD an extra bloom of the beautiful *Laelio-Cattleya eximia*.

TORQUAY ROSE DAY.

JULY 1.—The tenth annual Rose show, in aid of the Torquay and District Gardeners' relief Fund, was held on the above date in Messrs. CURTIS Sanford & Co.'s nursery, Torquay. Considering the excellence of the season, the

display of Roses for competition was hardly so good as might have been anticipated, but in the generality of cases the show was a week or ten days too late for amateurs.

The competition in the classes for groups of plants was poor. The miscellaneous cut flowers, particularly Carnations, were decidedly good. Table decorations were pretty, and light, and the competition showed a welcome increase on previous years. A feature of the show was, however, the large exhibition of cut Roses by Messrs. CURTIS, SANFORD & Co. They also made a display of various fruits from their fruit farm, and threw open their grounds, &c., to the public.

Messrs. VEITCH & SON, of Exeter, showed a new red-flowering hardy Cactus from Colorado, the first introduced into Great Britain; hardy Water Lilies, a new yellow hardy Honeysuckle, Bamboos, &c.

LEEDS FLOWER SHOW AND GALA.

JULY 7, 8, 9.—An attractive horticultural show was held in the Headingley Athletic Grounds, Leeds, on the above dates. The show has lapsed for several years, but was revived with considerable success on this occasion. The groups arranged for effect were excellent from every point of view. Mr. J. S. SHARP, gr., Almondbury, being 1st, and Messrs. R. SIMPSON & SON, 2nd. Collections of fruit were well shown by Mr. Edmonds, gr. to the Duke of St. ALBANS, Bestwood Park, Nottingham, 1st, and Mr. McIndoe, gr. to Sir J. W. PEASE, Bart., Hutton Hall, Guisborough, 2nd. The fruits of James Veitch Strawberry shown by Mr. Edmonds were especially fine examples.

Obituary.

MR. W. K. WOODCOCK, of Victoria Nurseries, Leicester, and for several years horticultural instructor for the Norfolk County Council, died at his residence on Friday, the 2nd inst., and was interred in Leicester Cemetery on Tuesday last. The deceased was much esteemed by all who knew him for his courteous demeanour, and uprightness of character. All the principal nurserymen and florists of Leicester, and other friends, followed his remains to their last resting-place.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 45° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	Above (+) or below (−) the Mean for the week ending July 8.	ACCUMULATED.			More (+) or less (−) than Mean for the Week.	No. of Rainy Days since January 8, 1897.	Total Fall since Jan. 8, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 8, 1897.	
		Above 45° for the Week.	Below 45° for the Week.	Above 45°, difference from Mean since January 8, 1897.						Below 45°, difference from Mean since January 8, 1897.
0	Day- deg.	Day- deg.	Day- deg.	Day- deg.	10ths Inch.	Ina.				
1	3 +	101	0	+ 34	— 8	1	114	19.2	25	30
2	1 +	106	0	— 7	+ 12	4	104	14.6	30	29
3	1 +	116	0	+ 74	— 78	2	98	11.3	27	32
4	3 +	143	0	+ 142	— 124	4	96	13.0	32	35
5	4 +	144	0	+ 99	— 115	1	94	14.0	30	33
6	4 +	148	0	+ 159	— 180	1	89	14.7	36	36
7	3 +	121	0	+ 18	— 21	2	112	20.8	25	31
8	2 +	128	0	+ 81	— 92	0 aver	108	15.9	31	33
9	3 +	139	0	+ 159	— 138	3	109	21.2	48	38
10	1 +	107	0	— 25	+ 8	2	121	21.1	10	29
11	3 +	133	0	+ 91	— 57	0 aver	114	21.7	22	33
12	2 +	136	0	+ 235	— 80	1	119	18.3	42	39

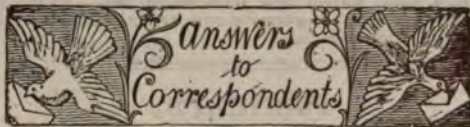
The districts indicated by number in the first column are the following:—

0, Scotland N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grain, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; *Channel Islands.

FLOWERS IN SEASON.—We have recently received from Messrs. J. Veitch & Sons, Ltd., Chelsea, two shoots and flowers of *Magnolia macrophylla*, taken from a plant growing in their Coombe Wood Nursery. Although introduced in the early part of the century, and flowered by Mr. James Vere in 1821, from whose plant a figure was prepared for the *Botanical Magazine* (see fig. 2189), the plant is not common in gardens. The leaves measure from 1 to 2 feet in length; and the flowers, which are white, are correspondingly large.

TRADE NOTICE.

We are informed that the business carried on for the past fifteen years, and known as "Eladon & Co.," the Vineeries, Milton, under the management of Mr. Thomas Eladon, will henceforth be known as "The Milton Nurseries," and will be under the sole management of Mr. William Willson.



ASPARAGUS PLUMOSUS: *G. P.* We have grown this plant in a vinery-border with success, but the best growers employ peat of good quality mixed with sand, in the proportion of one-sixteenth. This, we would remind you, is very different to sandy-peat, which is mostly a hungry kind of soil. In summer, the plant should be afforded cool stove treatment, and be shaded for a time after re-potting.

BEGONIA BLOSSOMS: *J. T.* An exceedingly fine variety of pleasing colour—worth preserving.

BOOKS: *J. K.* You will find all that you require in *Greenhouse and Stove Plants*, by T. Baines (London: John Murray).—*Fruit Farming:* *J. S.* Manuals dealing with the subject have been written in recent years by the following nurserymen, Mr. G. Bunyard, Maidstone; Mr. J. Cheal, Lowfield, Crawley; and Mr. Cranston, Hereford.

FREESIA BULBS: *H. F.* Any of the larger nurserymen, seedsmen, or florists, will supply them.

GALANTHUS (LATIFOLIUS): *J. P.* It is a variety of *Galanthus nivalis*, the common Snowdrop.

GREEN PEAS TO BOTTLE: *A. H.* Shell the Peas, put them into dry, wide-mouthed bottles, and shake them together, so that they may lie in as little space as possible. Cork the bottles closely, and seal the corks. Bury the bottles in the driest part of the garden, and take them up as they are wanted. They will keep good five or six months. Another way: Choose Peas which are large and fully grown, though not old. Put them into bottles, cork securely, and cover with bladder. Tie a wisp of hay round the lower part of the bottles, to prevent their knocking against each other in the pan. Put them side by side in a large saucepan, and pour into it as much cold water as will reach to their necks. Put the saucepan on the fire, and let it remain for two hours after the water has reached the boiling-point, then take it off, but do not remove the bottles until the water is cold. Seal the corks, and store in a dry place.

HERBACEOUS BORDER: *S. W.* Better is it than a mere list, which to those unacquainted with plants consists of names and nothing else, to visit a nursery where such plants are grown, and make a selection of those which please you at this season and during August, September, and October. Earlier than the present there bloom *Lilium dauricum*, great number of Irises of different sections of this lovely genus, *Narcissus* in great variety, *Paeonies*, *Iberis*, dwarf *Phloxes*, *Primulas*, *Violas*, numerous alpine plants, &c. Many species of herbaceous perennials increase fast in good well-trenched soil, and should not be planted at a less distance than 4 feet from their neighbours. The nurseryman would supply height, and probably size of the masses when at two to four years old. The spaces between plants of small annual growth may be 2 to 3 feet, and the smallest species may be planted at 1 to 1½ foot apart. Bulbs of *Narcissus*, *Lilies*, *Tulips*, *Hyacinths*, *Squills* (*Scilla*) of

all kinds, *Crocus*, *Chionodoxa*, *Ornithogalum*, *Watsonias*, *Colchicums*, &c., should be grouped among the other plants distant from the front of the border according to the height to which they grow.

LAND TAX EXEMPTIONS: *F. C. J.* You should obtain a copy of the Finance Act of 1896 from Messrs. Eyre & Spottiswoode, East Harding Street, E.C. (it costs but a few pence), and of the Memorandum prepared under the authority of the Board of Trade, 4, Whitehall Place, S.W. (which may be had gratis). You will then be in a better position for ascertaining the point you wish to clear up.

LILIAM BULBS DECAYED, &c.: *S.* *The Oaks.* Matters have now become so complicated, that it is impossible to say what was the first cause of the deterioration of the bulbs. There are fungus and many species of worms, and also the bulb-mite. We should throw all similar bulbs away, and plant afresh in well-drained, porous soil, free from fresh manure of any kind. This tuberose produces side-shoots in this case, because it has lost the centre one.

MELON FOLIAGE SPOTTED: *J. L.* The spotting of the leaves of Melon does not arise from any organic disease, but has been caused by some external circumstance. It is not likely to affect the fruit, or the general health of the plant. The soil would not appear to have had anything to do with it.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*H. K.* *Dendrobium macrostachyum*, and *Oncidium pumilum*. *H. K.* *Stanhopea inodora*.—*Foreman.* 1 and 3, varieties of *Cattleya Mendeli*, the former a very pretty white-petalled form; 2, *Cattleya Mossiae*, of the class commonly called "poor varieties."—*E. M.* *Linaria repens* (striata).—*East Norfolk.* Pink-flowered, *Spiraea Douglasii*; white, *S. arifolia*.—*J. W.* 1, *Cassia fulvida*; 2, *Indigofera decora*; 3, *Abies Pindrow*.—*Asplenium*. *Collomia linearis*, an annual; the Fern is *Lastrea serrata*.—*G. S.* *Carduus eriophorus* (Woolly Thistle).—*Constant Reader.* 1, *Forsythia suspensa*; 2, *Choisya ternata*; 3, *Combretum purpureum*; 4, *Phyllanthus nivosus*; 5, *Selaginella Martensii*; 6, *Corydalis lutea*.—*R. S. J.* 1, *Rhamnus alaternus*; 2, *Spiraea callosa*; 3, *Zenobia speciosa*; 4, *Veronica spicata*.

NAPHTHALENE EMULSION: *F. J. T.* For the methods of making and using this new sort of plant-dressing, you would do well to enquire of the principal of the South Eastern Agricultural College, Wye, near Ashford, Kent. See also paragraph on p. 8 of the last week's issue of the *Gardeners' Chronicle*.

ORCHID LEAVES TURNING BLACK: *J. H.* The leaves of Brazilian *Cattleyas* and *Laelias* are often affected in the manner shown in the specimens sent by you, in consequence of being kept too close, and in a too moist atmosphere after growth is completed. Or sometimes they may be caused to turn black by being caught by the rays of the sun.

PEACH CASTING ITS FRUIT: *W. C. G.* Probably a case of over-cropping, or at the least leaving more fruits than the tree can mature—hence it casts them off. One fruit to a square of 9 inches is close enough for a vigorous tree, and one per square foot for weakly trees, or when very large fruits are desired.

PEACHES, THE DECAY OF THE FRUITS EACH YEAR: *A. T. W.* The disease is caused by *Monilia fructigena*, a fungus whose presence shows itself in circular whitish or yellowish cushions on the surface of the fruit, which rapidly enlarge, and set up decay in the pulp. Another year you should remove the whole of the surface-soil to a depth of 3 inches, and whitewash the walls of the house, taking care to put a handful of flowers-of-sulphur into the wash. Use the Bordeaux Mixture on the trees when the fruits are stoned, and twice afterwards, also after the fruit is gathered.

PHYSALIS PERUVIANA: *J. E.* This plant has no other name excepting Cape Gooseberry, which it derived from the fact that it is cultivated at the Cape, as in many other warm countries. There is a yellow edible-fruited variety, *P. p. edulis*, syn. *Physalis edulis*.

SCOTS FIR DYING: *H. G.* There is nothing apparent to account for the death of the plants, but the position being an exposed one, they may have succumbed owing to their being too large when planted, and from being raised in a warm sheltered nursery.

The plant sent was ill-found in roots, and if all of the plants were like it, their chances of living were poor.

STRAWBERRIES: *G. P. H.* The Strawberries reached us in a deplorable condition, covered with a superficial mould, which was an after-product; otherwise we discover no actual infection of the fruit, and no fungus disease. We are inclined to the belief that the cause is a purely local one, and is due to external circumstances, which we cannot infer from the fruits themselves. There is something wrong in the surroundings, and not in the plants themselves, as is evident from the luxuriant foliage. *M. C. C.*—*Dr. K.*, and *P. S. C.*, *Wimbledon.* The plants are attacked by a fungus, *Botrytis vulgaris*. See reply to "*C. T. Slough*," in our last issue, p. 12, col. 1.

STRAWBERRY FRUITS DISEASED: *L. C.* Affected by *Botrytis vulgaris*; see *Gardeners' Chronicle*, last week's issue, p. 12, under initials "*C. T.*"

STRAWBERRIES SPOILED: *X.* The beetle sent is *Harpalus ruficornis*. See answer to "*A. G.*," p. 12 in our last issue.

THUJA GIGANTEA: *W. T.* The plant was shown under the name of *T. gigantea*, a name common in gardens. *T. Lobbi* is another name for it, but the true name is *T. plicata* (not of gardens); and *Libocedrus decurrens* was also once erroneously called *T. gigantea*. The former is from British Columbia, the latter from California. There are variegated garden forms of each. Whether the synonym was attached to the plant shown, our recollection does not serve us.

TOMATOS: *S. A.* There are no signs of the ordinary Tomato-mould on your plants. They appear to be suffering from something wrong in the treatment, and not from any organic disease. If the *Sclerotium* (referred to in a previous number) has anything to do with it, which is probable, it is not far enough advanced to be determined. The marks on the stems, and the discoloured tissue are suspicious of this disease in an early stage. *M. C. C.*

TOMATOS DISEASED: *H. P.*, *Frystone.* *Cladosporium lycopersici*, see *Gardeners' Chronicle*, last week's issue, p. 12; and figured at p. 533, vol. ii. for 1887.

VINES EXUDING SAP ON HOT DAYS: *H. A. C.* We suppose the very powerful upward flow of the sap owing to rapid evaporation from the leaves, is the cause, the pressure forcing some of it through the bark. If you could reduce the warmth of the house by ventilation, or the use of a thin shade over the Vines during the hottest hours, the flow of sap would be lessened, and no exudation occur. It is not likely to be followed by bad consequences to the Vines.

VINES WITH WARTY FOLIAGE: *G. G.* The warts are due to too great humidity in the air of the vinery; or, putting it in another way, to deficient ventilation. The warts do no harm, and the leaves are otherwise healthy.

COMMUNICATIONS RECEIVED:—*J. J. W.*—*C. W. D.*—*J. C. & Sons.*—*E. B.*—*Saw & Sons.*—*K.*—*Dr. M. C. C.*—*E. C.*—*G. Grigg.*—*W. W.*—*H. Lambert.*—*Ayrshire Lad.*—*A. O.*—*D. T. F.*—*R. D.*—*J. A.*—*S. Castle.*—*J. H.*—*A. H. K.*—*J. H.*—*J. W.*—*J. B.*—*G. D.* (no charge).—*H. H. D'O.*—*B. D.* & *Co.*—*A. G. H.*—*Mrs. B. W. M.*—*W. Bailey Wadde* (paper, with many thanks).—*L. Cummings* (next week).

PHOTOGRAPH RECEIVED WITH THANKS from Dr. Kriehlin—Messrs. Krelage.

(Market Report, see p. ix.)

CONTINUED LARGE INCREASE in the CIRCULATION OF THE "GARDENERS' CHRONICLE."

IMPORTANT TO ADVERTISERS.—The Publisher has the satisfaction of announcing that the circulation of the "*Gardeners' Chronicle*" has, since the reduction in the price of the paper,

Increased to the extent of more than 90 per cent., and that it continues to increase weekly.

Advertisers are reminded that the "*Chronicle*" circulates among

COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS

AND GARDEN-LOVERS at home, that it has a specially large

FOREIGN AND COLONIAL CIRCULATION, and that it is

preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, JULY 17, 1897.

VEITCH MEDALLISTS OF 1897.

THE following awards of Medals of Honour have been made by the Veitch Trustees. Circumstances have this year prevented the attendance of the recipients in person, and the Medals have accordingly been sent to them.

NORMAN C. COOKSON in recognition of his great success in the hybridisation of Orchids. Among the earlier acquisitions, mention may be made of *Cypripedium Io*, *C. Godseffianum*, *C. nitidissimum*, and *C. Sanderæ superbien*, still highly appreciated. Besides these, some of the finest hybrid *Cypripedium*s obtained by other operators as *C. Calypso*, *C. Morganæ*, *C. cardinale*, *C. Niobe*, have been raised by him from the same pairs of species, and have very properly received the same names. In other genera he has obtained *Calanthe Cooksoni*, *Cattleya William Murray*, *Lælio-Cattleya Phoebe*, *Dendrobium Venus*, *D. Owenianum*, *Masdevallia Courtauldiana*, all hybrids of great merit. With these may be grouped *Phaius Cooksoni*, a plant of exceptional interest, on account of its being the first hybrid *Phaius* in which the remarkable Madagascar species *P. tuberculatus* has participated in the parentage. Among later acquisitions *Cypripedium Bryani*, *Lælio-Cattleya Doris*, *Dendrobium Sybil*, and *Phaius Cooksoniæ*, are beautiful hybrids, but especial prominence must be given to *Odontoglossum crispum-Halli*, one of the most remarkable of artificially-raised *Odontoglossum*s; and scarcely less interesting is the confirmation of the supposed parentage of *Cattleya Hardyana*. The hybrids raised by Mr. Cookson include a large range of subjects, and will bear enduring testimony of his horticultural skill.

MARTIN R. SMITH, in recognition of his great success in improving the garden Carnation. This success is the more remarkable from the fact that when Mr. Smith took up the subject he began to work in a field in which great results had been already obtained, especially by the late Charles Turner and Ephraim Dodwell, besides other cultivators of this popular flower, when further improvement seemed well nigh unattainable. It is well known among amateurs of the Carnation, that of the numerous seedlings raised annually, very few retain a permanent place in collections. A glance through the groups into which florists have distributed the different forms and colours, shows that some of Mr. Smith's seedlings possess qualities that will make them exceptions to the general rule, especially in the group known as Malmaison Carnations. In this group Mr. Smith's acquisitions are particularly valuable, not only to amateurs, but to horticulturists generally.

CHARLES NAUDIN, for distinguished services to botany and horticulture. He is one of the most eminent French botanists of the present

time, and has been for upwards of thirty years a member of the Académie des Sciences, the most important scientific body in France. He began his scientific career in the Jardin des Plantes, where he soon gained distinction by his accurate investigation of the subjects submitted to him. Among these were numerous experiments to determine the nature and validity of species, including the determination of the many cultivated varieties of the Gourd and Pumpkin. By carefully growing the numerous kinds side by side, by comparing one with the other, and by crossing or attempting to cross one with the other, he eventually succeeded in tracing all the edible and most of the ornamental forms to *Cucurbita Pepo*, *C. maxima*, and *C. moschata*. While connected with the Jardin des Plantes, he collaborated with Professor Decaisne a general treatise on horticulture, entitled *Manuel de l'Amateur des Jardins*, still the most scientific and best illustrated work on gardening in the French language. Failing health obliging him to leave the Jardin des Plantes about the year 1870, after passing some years in experimental horticulture at Collioures, he accepted the directorship of the Villa Thuret garden, established by M. Gustav Thuret and Dr. Bornet at Antibes, as a botanic garden for experiments in the acclimatisation of subtropical plants. The villa and garden are now the property of the French Government, and form a sort of southern branch of the Jardin des Plantes, under the direction of M. Naudin, in which are cultivated Australian, South African, and many other subtropical plants, for distribution among the French colonies, and for the use of the Universities of France. Since his instalment at the Villa Thuret, M. Naudin has published a valuable *Manuel de l'Acclimateur*, in which the author's extensive knowledge of the large and difficult genera *Acacia* and *Eucalyptus* is conspicuously shown.

MAX. LEICHTLIN, in recognition of eminent services to horticulture, especially the introduction of many new and beautiful plants. Herr. Max. Leichtlin occupies a unique place among the horticulturists of the present day. Apprenticed to a gardener in his youth, he subsequently held situations in several places, but finally settled down at Baden-Baden, where he founded a private Botanic Garden, which has since become a household word wherever rare and beautiful species of bulbous and perennial herbaceous plants are prized. In this remarkable garden, scarcely half an acre in extent, Max. Leichtlin has worked for upwards of forty years, with the assistance of only one or two skilled labourers. During this period, remote corners of the earth have been searched for plant rarities; and when once these treasures have found a home in the little garden at Baden-Baden, the skill of the owner has rarely failed to make them available for the gardens of Europe.

To enumerate the many plants introduced by Max. Leichtlin would require a very large page of letter-press; but to show how cosmopolitan his operations have been, a few representative instances should be noted. Thus, among his introductions we have *Anemone blanda* from Armenia, *Colchicum Szowowitzii* from Persia, *Bomarea oligantha* from Colombia (S. America), *Calochortus Leichtlini* from California, *Eremurus robustus* and *Ostrowskya magnifica* from Central Asia, this last the grandest of all Bell-flowers; *Galanthus Regine Olge* from Greece, *Glaudiolus platyphyllus* and other species of *Glaudiolus* from South Africa,

Kniphofia comosa from Abyssinia, *Leucocoryne purpurea* from Chili, *Meconopsis racemosa* from China, *Olearia insignis* from New Zealand, *Tigridia Van Houttei* from Mexico, and many more, forming a surprising record for one man. Besides all these, many beautiful forms have been raised in the Baden-Baden garden by hybridisation and selection, as the *Kniphofia* hybrids, *Præonia Moutan* varieties, *Clematis coccinea major*, *Crococsmia aurea imperialis*, *Aubrieta deltoidea Leichtlini*, and many more.

The plan adopted for the cultivation of so large a number of species within so small a space is a very simple one. As soon as new plants and bulbs have been proved and multiplied, they are distributed among the gardens of the world, and room is made for new introductions. Novelty and change are the predominant features of the Baden-Baden garden; the occupants of it at one epoch disappear within a short period afterwards.

Professor L. H. BAILEY, for eminent services to horticulture. As Professor of Horticulture in the Cornell University in the State of New York, Mr. Bailey has laboured earnestly to promote the science and practice of horticulture in the United States in various directions. This he has done primarily by lectures in which he has brought before his audiences, usually consisting of farmers and others engaged in the manual work of cultivation, the more important facts in plant physiology, which are apt to be over-looked by ordinary workers, besides other illustrations of plant-life, some knowledge of which is indispensable to those engaged in gardening and agriculture. He has done essentially good work in teaching and illustrating the use of insecticides, in investigating the origin of plant-diseases, and experimenting on the means of arresting them, especially in fruit-trees, in which he has rendered valuable service to the fruit-growers of America. He is one of the most prolific writers on applied botany in the United States; the numerous year-books on horticulture, and the useful *bulletins* issued by the Agricultural Station connected with the Cornell University, bear ample testimony to his great activity in disseminating useful knowledge, whether derived immediately from his own observations and experiments, or from the publications of others. He has published several important scientific works, among the latest of which is one entitled *The Survival of the Unlike*, a collection of evolution essays, suggested by the study of domesticated plants.

NEW OR NOTEWORTHY PLANTS.

EPIDENDRUM STANHOPEANUM, Krzl. (Amphiglottium Holochila).*

COLUMBIAN Andes, Ocaña, leg. Oscar Stanhope. Stems short, 8 to 10 cm. high, leaves distichous, ovate, green, with large transverse stripes or blotches

* *Epidendrum Stanhopeanum*, Krzl., n. sp. (Amphiglottium Holochila).—Caulibus subcapitibus ad 10 cm. altis; foliis 8–10, distichis ovatis (infima late-ovatis) obtusis antice minute papilloso-serrulatis, cartilagineis, ad 2.5 cm. longis, vix 1 cm. latis, vittis transversis purpureis ornatis (?), vagina ampla ochrea tenera petaloides pallide viridi-rosea (!) in ipsa basi racemi; racemo brevi paucifloro (–4), bracteis ovatis acutis quam ovaria multoties brevioribus; sepalis dorsali lineari-ligulato acuto, acuminata, lateralibus lanceolatis subobliquis; petalis lineari-oblongis apice papululorum latioribus, labello integro profundo cordato reniformi antice rotundato margine minutissime (sub lente) denticulato, disco omnino glabro, basi ipsa labelli sub fovea stigmatica incrassata; gynostemio pallidius marginato, osterium generis. Sepala petalorum 1.3 cm. longa, sepalum later. 5 mm. lata, labello 1 cm. longum, 1.5 cm. latum. Omnes floris partes necnon spatha virides roseo suffusæ, labello intensius roseo punctatum. F. Krzl. in.

of (as far as we can judge from Mr. Stanhope's drawing), a somewhat dirty purple. At the base of the short few-flowered raceme is a very peculiar sheath of weaker and evidently rather tender consistence. The three or four flowers are about 2.5 cm. across, the lip is deeply cordate, reniform or nearly half-circular in its circuit, with very minute toothlets around its border; the petals are linear, the lateral sepals narrow, oblong, or nearly lanceolate and oblique. The colour of the flower is light green, with a rosy-purplish hue, and some deeper spots on the lip; the sheath of the raceme has the same colour, but the green prevails. If I add that the apex of the leaves is minutely but sharply toothed, all characters of some value are enumerated. It is extremely difficult to day to determine *Epidendrum*, the literature being dispersed to the utmost degree, and with great hesitation I add this species to the crowd of more or less known and partly phantom-like species. I hope, too, that in a short time we may have the plant living in Europe. Mr. Stanhope gathered the plant in the remote surroundings of Ocaña, and sent me a good sketch in water colours, and two dried specimens.

The plant is far from being what we may call a beauty, but a dense cluster of the little stems with the marbled leaves will certainly make a good effect. The short racemes are clothed at the base by a large scale or sheath of about the same colour as the flowers, a character not very frequent in *Epidendrum*, the leaves, too, are toothed at their apex, also a good not very frequent character. The plant belongs undoubtedly to the affinity of *Epidendrum carinatum*, Lindl., *miserrimum*, Lindl., a group of little and mostly inconspicuous plants of merely botanical interest, and among those it may be considered as the best of them all. *P. Kränzl.*

NOTES FROM MENTMORE.

THIS, the Buckinghamshire residence of the Earl of Rosebery, has always had an interest for gardeners and those interested in horticulture, and especially in that which affects the fruit-growing industry, viz., the cultivation of the Apple, Plum, and Strawberry, but more especially the second named, so no experimental planting on an extensive scale having been instituted at Mentmore about twenty years ago. These orchards were, we believe, laid down by Mr. J. Smith, who was his gardener then as also at the present time. These plantations of Plums cover an area of about 200 acres. The produce from the orchards is in some years very heavy, and being graded to suit the requirements of the markets, it finds a ready sale at very remunerative prices. The soil is by no means everywhere of good quality, it being in parts a thin and infertile clay that cannot support a fruit tree for any length of time without considerable additions in the form of compost, dung, or other plant-foods. At the best, a Plum is not a profitable tree after twenty years' cropping, more especially if planted in grassed orchards as here; and we noted new plantations of this kind of fruit, intended, apparently, to take the place of the earlier ones, as these in the course of a few more years cease to be profitable.

A visit to the kitchen garden showed us that Mr. Smith still holds to his fancy for growing numbers of the finest varieties of Strawberries, which are kept till such time as he has thoroughly tested them in regard to their cropping capabilities, flavour, fitness for packing and travelling, forcing, and general appearance. The first variety shown us was, as belittled the time—Jubilee week—that showy fruit, Royal Sovereign, and an extraordinary crop it was, too. Alongside of it grew Noble (Laxton's), the fruit of which was fit for the table simultaneously with the first-named. Its crop was enormous, but as regards the flavour of the fruit, it must be said that it was flat and insipid as compared with Royal Sovereign, itself a fruit not particularly rich in flavour. A great number of the fruits of this last-named variety were of a wedge shape, but generally they resemble those of Sir Joseph Paxton, of which it is either a seedling or a

selection. Monarch is another large-fruited Strawberry, with a glazed surface, and prominent seeds, a form of fruit usually betokening firmness and suitability for market purposes. The fruits are often wedge shaped, and the plant crops heavily, but less than Royal Sovereign. It is a variety that is likely to find favour with gardeners and market-growers, as it has with Mr. Smith—that is, till, in its turn, it is superseded by something better.

A variety which crops heavily, but has soft pulp, sunken seeds, and a pale red colour, is Leader. The fruits are large, but the flavour has, however, nothing to recommend it as a variety for general cultivation. The old favourite variety, Keen's Seedling, although well grown, was a pigmy among these giants, but in flavour it was surpassed by none. Of late varieties, we were pleased to find the following still grown: Elton Pine, Alice Maud, Waterloo, and Late-of-All, all looking much alike at that date. If a Strawberry is considered to be worth cultivating it is not destroyed till the third year, that is, three crops of fruit are taken. The runners, taken early, are simply layered in restricted numbers per plant on the soil, no regard being taken whether a runner is the first or the second reckoned from the mother-plant. This method entails little or no labour spent in watering; the roots do not get coiled up in a small space, as will happen when the layering is done in 60's, but their roots radiate all round the ball, ready to seize upon the soil as soon as planted. The planting is done in July or the first week in August, a small crop is taken the first season, and usually heavy crops the two following seasons. There is thus a good breadth of Strawberry-land set free each year which comes in excellently well for Broccoli planted à la Richard Gilbert.

The exploration of the garden in search of Strawberries brought the principal crops of vegetables within ken. Of Peas mention may be made of Chelsea Gem, which was cropping very heavily. William I., which some gardeners no longer grow, is much liked, it being very prolific, and turning in in about ten weeks from time of sowing, than which there is no earlier Pea. Mr. Smith does not altogether favour those varieties of Peas that possess large haulm, and believes that, speaking generally, they are excelled in flavour by some of the older and smaller-growing varieties.

The variety of Cauliflower, Early London, is much liked here, than which there is none better when it can be obtained true, the curd being snow-white, well protected by the in-growing leaves, and mild flavoured.

The true and even-looking haulm of the various Potato patches would have charmed even an Irishman. Snowdrop (Perkins) claims to be the best-flavoured Potato grown, as it certainly is a good cropper. The stock of it seemed absolutely true—no small achievement where so many varieties are grown as here. Sutton's Supreme, a variety raised by the late Mr. Clarke, and introduced in 1893; Harbinger (Sutton), Up-to-Date, and Sharpe's Victor, received a word of commendation from the gardener. He showed us a fine strain of that excellent main-crop variety, Sutton's Triumph, first sent out in 1892; in form, the tuber resembles the Fluke. Among the earlies were noted Early Puritan, of American origin, a flattish round tuber, cropping heavily and ripening early; Veitch's Rivers', Royal, and Myatt's Ashleaf, the last-named being rather the later of them all, so that it forms a succession to them. One which is said to almost equal Snowdrop is Epicure's Delight, a piece of which was pointed out to us. Windsor Castle (Sutton's) was said to be the finest round Potato in cultivation. It is a heavy cropper, a good disease resister, of a handsome pebble shape, and when boiled the flesh is white and floury; it is what is known as a second early variety.

In the Apple quarters, the trees are in bush form; and those varieties which withstood the frosty easterly winds of the past spring on a fully-exposed site are Ecklinville, Lane's Prince Albert, and Stirling Castle, all of which are bearing abundantly. Keewick Codlin has a heavy crop. This old sure-cropping variety,

coming into use for cooking purposes before any other, is too often discarded now-a-days for much poorer cropping ones. Newton Wonder is a new Apple that is cropping well this season. Two long lines of Cox's Orange Pippin backed by a line of King of the Pippins, looked well. Calville Boisdun was a good crop—young bushes on dwarfing stock, likewise Gascoign's Scarlet. An Apple well spoken of by Mr. Smith is White Transparent; and of Duches's Favourite, a large lot of dwarf bushes were remarked. Seaton House is another sort of Apple that always bears heavily, making it just the one for the allottee or cottager; this and Worcester Pearmain and Keewick Codlin have good crops in most years. That fine late plum, Cox's Golden Drop, is extensively planted; for does it not fetch rare prices in the market—in fact, no other sells so well. Market growers in perspective should note this. A break of Pears was observed, which consists of trees of the following varieties, Marie Louise, Monarch, Easter Buerre, and some few others of our finest Pears, besides rows of the Catillac.

A march through the vinerias and other fruit-houses revealed some fine crops of Dr. Hogg Grape in the latest house; in another, excellent crops of Lady Downes, Lady Hutt, Appley Towers, Gros Maroc, and Mrs. Pince. In one vinery, the varieties Foster's Seedling, Madresfield Court were approaching ripeness. The earlier houses had either been cleared of their crops wholly or in part.

There are several Peach-houses, and we were informed that extensive additions were to be made shortly to the fruit-houses, including houses for Figs, Plums, Cherries, Vines, &c., so that the glass appurtenances of Mentmore will in the course of a year or two be very complete; and as regards the fruit-houses, they will be brought together as they should be—in the fruit-garden.

The plant-houses were in excellent trim, but time being short, only a cursory glance could be afforded them.

THE CORYANTHES.

THE members of this extraordinary section of the Stanhopea tribe, which are found rather widely distributed in tropical America, have been known to science for upwards of three-quarters of a century. Although the plants have remained uncommon, the limited number of them which have flowered in gardens have caused more wonder and admiration by reason of the extraordinary structure and general dissimilarity to other flowers than have any of the showier and more popular species and genera. Every portion of the floral structure in *Coryanthes* affords proof of the correctness of the theory that Orchid fertilisation is brought about by insect agency, and what was conjectured from a study of the plants under cultivation has been fully substantiated by such careful observers as Dr. Griseb., formerly Director of the Botanic Gardens, Trinidad; Mr. J. Rodway, F.L.S., and others, whose investigations were published in former issues of this journal.

The *Coryanthes* are strictly epiphytal, and it was noted by importers that the specimens obtained by collectors were mere tufts of pseudo-bulbs proceeding from long oval masses of roots, and with scarcely a particle of moss or other substance or growth about them. These suspended masses were, according to the collectors, the homes of innumerable ants, and it was even asserted that the presence of the ants was essential to the well-being of the *Coryanthes*. This, however, as Mr. Rodway explained, is only another of Nature's wise provisions—the masked root-growth of the plant supplies a congenial home for the ants, who in return attack the numerous other insects which would injure the plants, and thus in exchange for lodgings give protection.

Our illustrations of *Coryanthes Feildingii* (figs. 7, 8), one of the oldest but still one of the most rare species, will indicate the size that the flowers of most of the *Coryanthes* attain; while the analytical figure (p. 39) illustrates the method of fertilisation. The structure of the flower is exceedingly strange, and not the least remarkable feature about it is the contrast

between the membranous sepals and petals, and the thick fleshy labellum, the former soon curling back into comparative insignificance, leaving the large and complicated lip as the chief attraction. As soon as the flower expands, a strong and penetrating odour is emitted, and, to quote Dr. Crüger's words, "large humble-bees, noisy and quarrelsome, are attracted at first by the odour; but this probably only gives notice to the insects. The substance they really come for is the interior lining of the labellum, which they gnaw off with great industry. They may be seen in large numbers fighting with each other for a place on the hypochile. Partly by these contests,

with this peculiar appendage, to return nearly immediately to its feast, when it is generally precipitated a second time into the bucket, passing out through the aperture, and so inserting the pollen into the stigma while it forces its way out, and thereby impregnating either the same or another flower. I have often seen this, and sometimes there are so many of these humble-bees assembled that there is a continual procession of them through the passage specified."

The above remarks related to *Coryanthes macrantha*, but they apply equally to other species, and reference to the explanation of the analytical drawing will assist the reader to understand it perfectly. The



FIG. 7.—*CORYANTHES FIELDINGI*: FRONT VIEW OF FLOWER.

(SEE P. 30.)

partly perhaps intoxicated by the substance they are consuming, they tumble down into the bucket (epichile), which is half filled with the fluid secreted by the horn-like organs at the base of the column. They then crawl along the anterior inner side of the bucket, where there is a passage for them. If one is early on the look-out—for these Hymenoptera are early risers—one can see on every flower how fecundation is performed. The humble-bee, in forcing its way out of its involuntary bath, has to exert itself considerably, as the mouth of the epichile and the face of the column fit together exactly, and are very stiff and elastic. The first bee that is immersed will have the gland of the pollen-masses glued to its back. The insect then generally gets through the passage, and comes out

congregating of the insects takes place on the cap above the ribbed mesochile, and the fall of the insect into the bucket, and its passage out, during which the act of fertilisation takes place, is shown by the position of arrows.

The genus was founded by Sir W. J. Hooker in 1831 on *C. maculata*, joining with it *C. speciosa* and *C. macrantha*, which had previously been known as *Gongora*, and at different periods some ten or a dozen other species have been added. The prevailing colours of most of them is yellowish, with crimson and purple markings; though, as in the case of the *C. maculata* vitrina, imported by Messrs. F. Sander & Co., which is wholly greenish-yellow, varieties have appeared in which the coloured marking is suppressed.

A plant of *C. macrantha* flowered recently with

J. H. Kitson, Esq., Elmet Hall, Leeds (gr., Mr. T. Bonnell). A flowering plant of *C. elegantium* was figured under the name of *C. macrantha* in *Gardeners' Chronicle*, May 6, 1882, pp. 593 and 597.

Of comparatively recent introductions, five remarkably beautiful species may be specified, viz., *C. macrocorys*, distinguished by its slender, ungrooved mesochile, and narrow and long hood; *C. leucocorys*, with rich purplish-crimson bucket, and pure white hood; *C. Bungerothii*, a rich yellow-lipped species, spotted inside the lip with bright crimson, and in which the hood is prolonged over the neck-like mesochile, like a cape; *C. Wolfii* and *C. Mastersiana*, both of which are described by Consul F. C. Lehmann as of a new section of *Coryanthes*, with stout, ascending inflorescence, in the *Gardeners' Chronicle*, October 24, 1891, p. 483. The former has flowered in the Royal Botanic Gardens, Glasnevin, Dublin, and proved a very fine species.

Coryanthes, being epiphytal plants, require to be grown under cultivation in baskets, and with no great bulk of material, such as peat or sphagnum-moss around them. During growth an unlimited supply of rain-water should be afforded, and the plants should be placed in a warm, moist, but airy house. After flowering is past, the condition of the Mexican-house is best suited to their needs, but at no period should they be exposed to cool treatment. At the same time there is every reason to believe that the scarcity of the plants in gardens is mainly due to their being kept continually in the same excessively warm, and too often ill-ventilated house. It should be borne in mind that whether growing in hot or cool houses, all Orchids require ventilation. J. O'Brien.

CORYANTHES LEUCOCORYS.

This species well shows the peculiar structure of the genus. A plant is now in flower in the Botanic Garden, Edinburgh, carrying one flower upon the pendulous scape, which springs from the base of the furrowed pseudo-bulbs. They are short-lived; the sepals soon collapse, and, indeed, the whole flower lasts but three or four days. The principal attraction in the flower is, perhaps, the immense helmet-like structure into which the secretion drops—this being of a pale coral-pink, and the ivory hood white. The plant has been grown in an unshaded part of a pit devoted to *Nepenthes*, and in this position it is well suited. A figure of this species is to be seen in *Lindenia*, t. 293; its habitat is Peru. R. L. H.

ORCHID NOTES AND GLEANINGS.

CATTLEYA SCHILLERIANA.

To succeed well with this plant it should be placed in a basket with good fibrous peat and living sphagnum, to which a few lumps of charcoal should be added, or, if preferred, it may be placed upon a block with a little sphagnum. It should be suspended near the glass, at the warmest end of the *Cattleya*-house, but it will require to be shaded from the direct rays of the sun. During the growing season it should, of course, have a copious supply of water at the roots; in winter, however, it will do with much less, although care must be taken not to let the plants shrivel, as this would cause irreparable injury. *Orchid Album*, vol. xi, part 132.

LELIA LINDLEYANA.

To thrive well, this plant should be placed in the cool part of the *Cattleya*-house. It should be potted in a compost of good fibrous peat (from which all the earthy particles have been shaken out) and chopped-up live sphagnum. A few lumps of charcoal added will be beneficial in preventing the compost becoming sour. Care must be taken, above all things, to place an ample supply of draining material at the bottom of the pot, for if this be neglected the plants would stand but a poor chance of obtaining a hold. A liberal supply of water at the roots, as well as occasional syringing overhead, during the growing season, are essential to their well-being. During the resting period the supply of water should be

gradually diminished; at the same time, however, it must be borne in mind that the plant should never be allowed to become absolutely dry, as in that case the pseudo-bulbs would shrivel, and this would cause serious injury to the plant, which it would take years to undo, and in some cases it would even prove fatal. Thrip and scale should also be carefully guarded against, for if these pests once get the upper hand, they cause irreparable injury to the leaves. Steaming with Tobacco-juice, and the use of other fumigating apparatus, will effectually keep these insects in check. *Orchid Album*, vol. xi., part 132.

FLOWER BEDS IN RIVIERA GARDENS.

A PROMINENT feature of the Riviera gardens lies in the wonderful variety of form and colour found in the flower-beds. Such gorgeous displays in the open air, as one sees there, are much appreciated by visitors from our foggy island upon their arrival on the shores of the Mediterranean. In those establishments where the flower gardens must be kept bright during the whole season, that is from November to the end of April, it is necessary to make two almost distinct plantings. Those plants which bedded-out in November, furnish the first display, are supplanted about February by their floral successors. As the season is so short, the majority of the plants are necessarily near the flowering-stage when transferred to the beds.

The primary occupants of the beds are usually Salvias, Daisies, Primulas, Pansies, Solanums, and Carnations. Of *Salvia*, *S. patens* is, I think, the most largely used, and it has a distinct and showy appearance. The Daisies are remarkable for their size and colour; and in these respects they surpass English ones. Of Primulas, although the white and various shades of red are pleasing, by far the most effective are the deep blue ones [?]. These are generally placed in well shaded positions, where their colour is shown off to perfection. The Pansies retain their positions to the end of the season, and by that time they have developed into splendid clumps, covered with numerous fine, large blooms. Here all Pansies are raised from seed sown in pans in the month of June, and placed in some shady spot outside, and when large enough to handle, they are pricked off into *carrés*, i.e., beds prepared somewhat below the level of the ground, so as to retain water. They remain in the *carrés* throughout the summer, and in the autumn are taken up for planting as required.

Carnations are generally grown from cuttings, taken off early in January, and put into prepared *carrés* for the summer months; and any flower-buds which may appear during this time are pinched off, with the result that the plants develop a bushy habit of growth. Under this method of culture they bloom profusely the following winter. One very ornamental little plant often seen in beds is *Solanum ciliatum* var. *macrocarpum*. It is raised from seed sown in July or August, and cultivated in pots. As many as twelve or fourteen bright orange-red coloured fruits are produced by each plant. *Solanum capsicastrum* is also bedded-out, and when well berried it is a very attractive plant. The above-mentioned plants are followed by *Cinerarias*, *Freeseas*, *Ranunculus*, *Anemones*, *Hyacinths*, *Tulips*, &c.

The *Cinerarias* form the most gorgeous beds of all. It is rather difficult to grow them successfully in this district, owing to the great heat of the summer; and they have to be grown in pots in the shadiest place that can be found for them until the approach of inclement weather, when they are removed to cold-frames. As signs of flowering become apparent, they are gradually inured to the rays of the sun, so that when the time arrives for planting, they are quite hardened off. Sometimes as many as 600 plants, comprising an endless variety of colours, are put into one bed, the effect of which may be better imagined than described. As an experiment, several small beds at the Royal Gardens, Frogmore, were filled with *Cine-*

arias last spring, which were quite a success. With a little protection given at night, they were almost as fresh at the end of a fortnight as when put out.

Anemones do wonderfully well on the Riviera, and mixed beds of them are very fine. *Anemone fulgens* is usually planted in beds by itself, and the multitude of bright, red, star-like flowers it produces, fully justifies this little indulgence.

Freeseas and *Ranunculus* blend together admirably, and seem to thrive best in a moist situation, often being seen in beds by a lake or river-side. *Hyacinths* and *Tulips* are made use of in large quantities for bedding. Their beauty is intensified, and their rich colours are relieved by white moss placed over the surface of the beds after planting the bulbs. *Cliveias*, *Spiraeas*, *Azaleas*, *Genistas*, and *Lilacs*, are also, in lesser quantities, made use of in this branch of gardening.

Occasionally one meets with beds filled with forced *Roses*. The varieties usually cultivated for this purpose are Paul Neyron, Mme. Gabrielle Luizet, Ulrich Brunner, Baroness Rothschild, La France, and Jules Margottin. I think the choicest little bed I ever remember seeing, was one composed of *Amaryllis* in flower with a groundwork of *Adiantum capillus-veneris*. *H. T.*

KEW NOTES.

VICTORIA REGIA.—A new variety of *Victoria regia* is now flowering at Kew. It differs from all the forms hitherto known in the pale green colour of its leaves, in the depth of the turned-up rim, which is from 6 to 8 inches; and in the sepals being glabrous on the outside, instead of being covered with spines, as in the others. It also differs in its time of flowering, the flowers opening early in the afternoon instead of about 6 o'clock, as do the other forms. They are, moreover, not so large as the flowers of the normal form. Kew is indebted for this plant to Mr. Tricker, of H. A. Drier's nursery, Philadelphia, who says it flowers with him when grown in a 12-inch pot, and that it grows quicker and in a lower temperature than the other forms. With him a single plant has had from fifteen to twenty good healthy leaves on it at one time, and frequently two flowers open simultaneously. It is by far the most striking *Victoria* grown at Kew within the last twenty years. In the same tank, and growing side by side with this new variety is a plant of Dixon's variety, in which the rim is comparatively low. There are no signs of flowers upon this one as yet. There is an appropriateness in the appearance of a new *Victoria* at Royal Kew in this Jubilee year, and unless Mr. Tricker objects, we might distinguish this from all other cultivated forms of *Victoria regia* by calling it the Jubilee variety.

HARDY NYMPHÆAS.

The hardy aquarium at Kew is now gay with flowers of most of the best of the hardy *Nymphæas*, including *N. Marliacea ignea*, *carnea*, *Robinsoni*, *fulva*, *lucida*, *flammea*, *albida*, *Laydekeri* *lilacea*, *alba rosea*, *odorata rubra*, *tuberosa flavescens*, and *tetragona helvola*. The last-named is a yellow-flowered variety of what is known to botanists as *N. pygmaea*. It is impossible to speak too highly of some of these *Nymphæas*, and anyone within reach of Kew who wishes to make the acquaintance of beautiful aquatic plants cannot do better than pay the aquarium at Kew a visit.

CAMPTOSEMA PINNATUM.

A plant of this is now flowering in the Palm-house at Kew, where it has been grown since 1888 when M. Glaziou of Rio sent seeds of it—and a second species, *C. grandiflorum*—to the gardens. The genus consists of ten species of shrubs or climbers, but only one, namely, *C. rubicundum*, has hitherto been introduced as a garden-plant, and that was sixty years ago, when it was figured in *Paxton's Magazine* as a *Kennedya*. *C. pinnatum* is a woody shrub, or small tree, with erect stem and branches, large pinnate leaves, with three pairs and a terminal pinnae, each 6 to 10 inches long, and about 4 inches wide. The flowers are in erect, crowded racemes, as in *Erythrina caffra*, the Kew plant having twelve

flowers in the raceme, each 2 inches long, and of a beautiful rose colour, that becomes tinged with mauve with age. It is likely to become a popular plant for tropical gardening. *W. W.*

COLONIAL NOTES.

CEYLON BOTANIC GARDENS.

MR. J. C. WILLIS, who has recently succeeded the late Dr. Trimen, as Director of the Royal Botanic Gardens, Ceylon, has published his Administration Reports for 1896. These are on the whole quite satisfactory. The Tea-crop was very successful, the export being the largest on record. Fruit-trees did not do very well. As in previous years they grew rapidly at first, but were damaged by excessive sunshine and a south-west monsoon before the fruit was perfected. A plantation of Crescent Seeding Strawberries from runners taken from plants raised from seed sent in 1892 from the Royal Horticultural Gardens, Chiswick, did marvellously well. The herbarium and library at Ceylon now need enlarging; the latter in great measure owing to the number of books received from the collection of the late Dr. Trimen. Application has been made at Kew for assistance in completing the fourth and last volume of his *Flora of Ceylon*.

NEW SOUTH WALES.

We have received from the Government printer a copy of the *Agricultural Gazette* for April. The chemist, Mr. F. B. Guthrie, has a valuable article on the fertilising value of bone-dust, and the information given should be of interest to those who make use of that manure. Dr. Cobb's contribution is a long series of letters on subjects embracing Wheat—varieties and nomenclature—Diseases (smuts and bunt, whiteheads); Maize rust; Diseases of the Plum; Apple (bitter pit, canker); Potato (wet rot, scab); Orange (Melanose [?], mal digoma, verrucosia, die-back, blackspot); Peach and Nectarine (Peach freckle, curl, the crease in Peaches); The Gall-worm; Diseases of the Grape; Onion; Timber Diseases; Preparation and Use of Bordeaux Mixture; Compound Mixtures; Drying Fruit for Home Consumption.

All the diseases, &c., are illustrated by means of excellent figures; and as the Doctor has been careful to express his ideas in the plainest possible language, the contribution is of extreme interest, and should be carefully read by all engaged in Wheat-culture, and the treatment of diseases of orchard and farm crops. A chapter on the diseases of timber is instructive, while for the information of those who desire to try the various sprays recommended, the Doctor's suggestions concerning the preparation of the mixtures should prove useful. Those engaged in fruit-drying should note the remarks concerning the use of sulphur fumes.

CONSTANTIA VINEYARDS.

According to a report on the government wine-farm presented to the Cape of Good Hope parliament, these famous vineyards are free from phylloxera. In other districts it is spreading rapidly.

CISTUS.

In these notes, which notice briefly a few kinds of *Cistus*, species and hybrids, now flowering in Edge Hall Garden, the nomenclature is that of Willkomm in his *Monograph of the Cistaceæ*; the illustrations in Sweet's *Cistaceæ* (London, 1825) are also referred to, as well as the excellent descriptions in *Clusius* (*Historia Plantarum*), made from personal observation more than three centuries ago, and nearly all of them of easy recognition.

Perhaps the commonest and best white-flowered *Cistus* of gardens is one generally misnamed *C. florentinus*. Concerning *C. florentinus* (true), Willkomm (p. 31) says that he has never seen wild specimens; that those he has seen resemble closely *C. montpelienensis*, and have flowers not nearly so large as those figured in Sweet's *Cistaceæ*, tab. 59. In fact, Willkomm seems to doubt the existence of the species. The shrub

which in gardens generally usurps the name is *C. hirsutus* var. *platysepalus*, Willkomm, p. 36, figured by Sweet, tab. 47, as *C. platysepalus*. Willkomm, who is not lavish in his praise of Sweet's figures, calls this "icon bona," and those who will take the trouble to compare their specimens of so-called *C. florentinus* with it, will find in most cases that they exactly agree. The pink-tipped buds and the nearly stalkless leaves, tapering to each end, distinguish it at once from *C. florentinus*. It is one of the hardiest of the genus, and inhabits Spain and Portugal, being wrongly referred by Sweet to Crete. Clusius figures it as Ledon, No. 4, and found it abundant in Old Castile, where it was well known by the name of Ardivieja.

of the name to the plant which now bears it dates from *Lamarck's Dictionary*. It is figured in Sweet, t. 39. It is very hardy, but is not known as a wild plant in Cyprus or anywhere else. It never bears seed in cultivation, and I believe it to be a hybrid *C. laurifolius* × *C. ladaniferus*. The name *C. cypricus* is taken from Clusius, p. 78, Ledon No. 3, *Cyprium* ×, who describes it as having pure white flowers, and having been introduced to Belgian gardens from Italy. It is evident that his description refers to some other species, and that it was transferred in error by Lamarck to the hybrid which still bears the name. The true *C. ladaniferus* from South Western Europe is far more tender, and has larger

are tolerably hardy, and are ornamental in gardens. *C. creticus* is very nearly allied to the last species, and produces seed freely, which may be easily raised. Two very good hybrids should be added to these—*C. purpureus*, not known as a wild plant, but is probably a hybrid; *C. villosus* × *C. ladaniferus*—it has large purple flowers, with a spot at the base, and is very ornamental, though it must rank amongst the less hardy kinds (Sweet, t. 17). The last to be mentioned is called in nurseries *C. lusitanicus*. I can refer to no portrait of it. It has become common in gardens during the last twenty years. It may be *C. ladaniferus* × *C. hirsutus*; the flowers are intermediate in size between the two parents suggested, and in colour they resemble those of *C. ladaniferus*. The habit is dwarf and compact, and it is one of the best cultivated varieties flowering at the beginning of July. There are many very ornamental species with yellow flowers, formerly called *Cistus*, but now classed as *Helianthemum*. *C. Wolley* Dod, Edge Hall, Malpas.

BOOK NOTICE.

FIRST REPORT OF THE WOBURN EXPERIMENTAL FRUIT FARM. By the Duke of Bedford, and Spencer N. Pickering, F.R.S.

THIS is a work of an extremely interesting character to the fruit grower, and a worthy addition to horticultural literature, containing, as it does, a fund of elaborate tabulated statistics, evidently compiled at great trouble, bearing upon the important subject with which it deals so comprehensively. We rather fear the average reader will perhaps feel somewhat confused in his efforts to master or grasp the advanced metric system of weights and measures adopted, but which is explained in the preface, and which will eventually become as common here as it is on the continent.

Every horticulturist will readily acknowledge the need of an experimental station, where experiments can be carried out on intelligent lines and on an extensive scale. It therefore follows that by undertaking and carrying out such a series of expensive experiments and their publication, the noble philanthropist-author and his assistant have the entire accord both of the fruit-growing and of the fruit-consuming community.

Throughout the entire work there appears a honest and hearty attempt to find out the "reason why," and when we get to know that, directly or indirectly, improvement is sure to follow. One sees the effect of scientific knowledge and practical experience, working, as they always should do, hand in hand.

Even those who take a severely practical view of experiments and statistics, will find much to interest them. In the case of young bush Apple trees, we fail to see the utility of the elaborate statistics of leaf and shoot measurements, seeing the different—widely different—characteristics of the several varieties, also the influence of the foster stocks used, so variable upon individual trees. Firmness in planting, and conservation of root-moisture, are important factors in the production of fruitful growth and wood growth in proper proportions, facts apparently overlooked. We should have liked to have seen more attention given to experiments bearing upon the reciprocal action of root growth and of wood growth, the latter bristling with fruiting spurs, brought about by the encouragement of an abundance of fibrous roots situated near to the surface, especially as regards the Crab stock.

We regard it as of little practical value to give us leaf-measurements, unless the character of the growth is accurately described also. Of course, we may take for granted that the Paradise stock, which seems the most favoured, will, as a rule, supply fruiting-wood amply, but what of its lasting properties? Our own experience is greatly in favour of the seedling Crab, brought under a system of root-lifting (not root-pruning), the trees being superior in longevity, in vigour and in the quality of the fruit. We also consider it waste of power to submit such kinds as Stirling Castle to annual root-pruning, as this is a kind which, in our experience, always over-bears

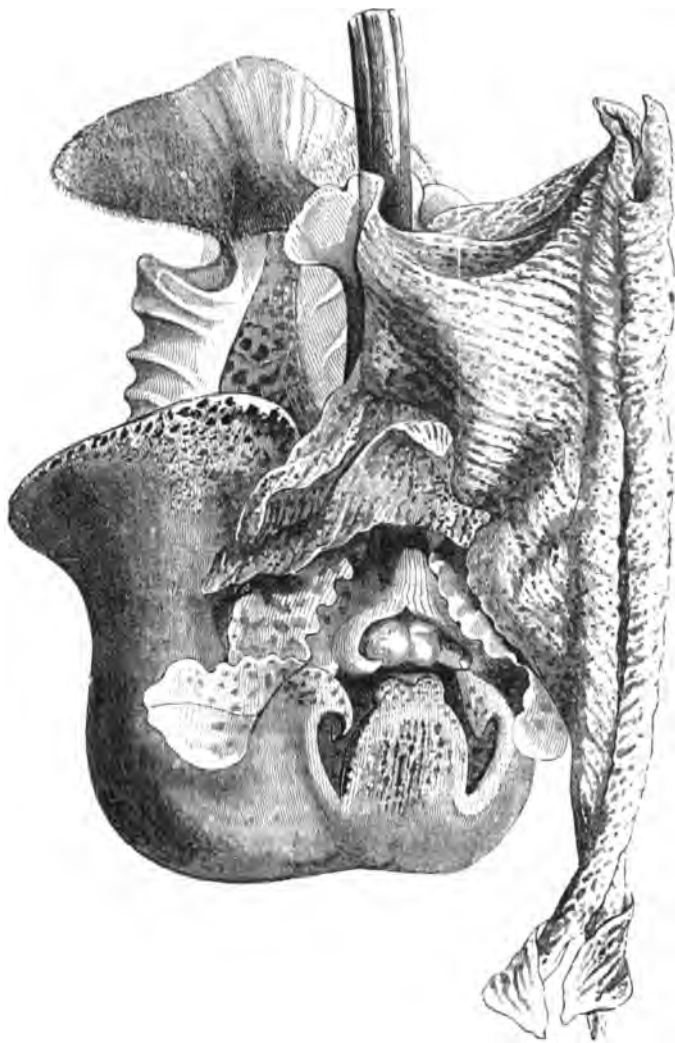


FIG. 8.—*CORYANTHES FIELDINGII*: BACK VIEW OF FLOWER.
(SEE P. 30.)

Similar in flower, though more cupped, but distinct in leaf from the last, the leaves being stalked and acute-cordate, is one figured by Sweet as *C. Cupanianus*, t. 70; it is hardy and common in gardens, and is referred by Willkomm, p. 50, to *C. Corbariensis*. He calls Sweet's figure "pretty good;" it is a native of southern France. Clusius, who figures it (p. 78) as Ledon No. 2, says that he observed it on the Sierra Morena, where it has not been found recently. The hardiest and tallest of the white-flowered *Cistus*es is *C. laurifolius*. Another, a most abundant species in south-west France, flowering in every roadside corner near Biarritz, is *C. salviæfolius*; this is not common in English gardens, proving less hardy than those mentioned above. A common and tall-growing kind, with large white flowers, having a purple spot at the base, is called *C. cypricus*. The application

flowers and narrower leaves, and is easily raised (I have raised it here in dozens) from seed.

The hardiest of the pink-flowered kinds is *C. crispus*; colour deep rich pink, leaves glaucous, and crimped; well-known in gardens (Sweet, t. 22), a native of Southern France and Spain; a plant easily obtained, and easily kept. The commonest pink-flowered *Cistus* of Northern Italy is *C. albidus*; flowers of a paler pink, and larger than those of *C. crispus*. It is very impatient of damp, and is easily lost.

The Gum *Cistus* of the East, extending into Palestine and Syria, and producing the precious ladanum of ancient and modern commerce, is *C. villosus* of Linnaeus, figured in Sweet, t. 35, and again, t. 44, by the name of *C. incanus*. It is called by Willkomm *C. polymorphus*, who describes (p. 19), several varieties of it. Some of these

itself—on the let-alone principle even. The application of heavy dressings of London stable manure for young fruit trees, except as surface-dressings, is very questionable, as being calculated to make flabby wood, difficult to ripen, and prone to be affected with canker sooner or later.

The question of pruning or non-pruning at planting time seems undecided, although results are given when the pruning took place at the time of planting, and when the trees were pruned hard at the end of the first year. Our own practice appears not to have been tested. It is this—the trees are planted in November, left intact until the March following, then the shoots are thinned out to four or five, and those left are shortened to one-third or one-half the previous season's growth. This lays the foundation for a healthy, well-shaped tree. Moreover, pruning at this period removes the bulk of the eggs and larvae of the winter-moth and other insects, which generally deposit their eggs on the extremities of the shoots—no mean advantage to young, struggling trees.

We are surprised at the results of autumn, winter, and spring planting, which are altogether at variance with the bulk of fruit-growers' experience. We trust these experiments will be repeated, and tested carefully. We have seen, again and again, trees taken up in October and November, laid in temporarily for a week, that have, when again removed, shown numerous freshly-formed white rootlets. Now, the inference is, that these active roots, if properly cared for by a generous mulching in time of severe frost, must give a tree advantages over one that has had its roots freshly mutilated to a greater or lesser degree in the spring. Planting when the soil is too dry or too wet should be condemned, as in the case of the former it cannot be properly made firm, and in the latter the soil would be consolidated and rendered impervious to solar warmth or aëration, which may account for the stated results of autumn planting.

With the experiment of allowing turf or weeds to have possession of the surface of newly-planted trees, we are in complete accord, as nothing have we found in our experience so detrimental to the well-being of the tree, weeds and turf being robbers, draining the soil of its surface-moisture and nutriment.

Experiments have also been made with too many varieties. We should have preferred statistics prepared from the same total of plants, but in a dozen varieties only. The same may be said of the other fruits.

In offering these criticisms, we do not forget that the whole thing is in the embryo state. At the same time, we are inclined to consider many of the experiments somewhat complex, and of little practical value; for after all we must look for definite results in the form of fruit crops more than in any other direction, and we shall certainly watch with increased interest future reports bearing upon this subject, and such as relate to the crops realised. The vigour of a tree is no criterion as to its fruit-bearing capabilities, and this is the point where trouble begins with so many. We should like to see experiments extended in the direction of converting vigorous trees into fruitful ones.

There is also the matter of insect pests, such as Apple-blossom weevil, winter-moth, Pear-midge, Plum-aphis, red-spider, mildew, and red-rust, all of the greatest importance to fruit-growers, and the methods of combating them. Information is badly wanted, because any one of the above is sufficient to cause an entire loss of crop.

The subject of mulching the roots to conserve moisture, and to encourage surface fruit-giving roots, receives but scant notice; yet we hold it to be one of the greatest importance, especially as to when and how done, all of which will receive in future editions the necessary attention and information.

MARKET AND OTHER STRAWBERRIES.

A GARDENER, evidently of some experience, writes as follows on this subject in a recent number of *Westmoreland Gazette*: "Many amateurs with but

limited experience commencing growing Strawberries for market, err in planting unsuitable varieties. I was speaking to a market-grower a few days ago (writes J. Crawford in the *Field*) about the relative merits of Strawberries for pot culture for market, when he expressed his dissatisfaction with the justly popular Royal Sovereign, owing to the soft texture of the fruit, and the fact that it showed almost the slightest pressure from the hand, and became much bruised from the ordinary shaking of the railway and carriers' vans. In this respect he compared it to La Grosse Sucrée, and placed Vicomtesse before it as a packer and traveller. It is, however, difficult to see how Royal Sovereign can be dispensed with for first early market supplies, as, all points considered, it is far superior to Noble; and size, coupled with good appearance and flavour is indispensable nowadays, even in the earliest market consignment. To meet the difficulty, extra care must be bestowed in packing, which Royal Sovereign will well repay. President still holds its own, and may well be recommended to those about to plant, as taking its hardy constitution, freedom in cropping, flavour, and firmness for packing, it is hard to beat for market. It is one of those varieties that seems at home in almost any soil that is fairly sustaining. Gunton Park is destined to take a leading position as a market Strawberry, as, besides being a free and continuous cropper, it is one of the firmest, arriving at the end of long journeys, if fairly well packed, in splendid condition. No one having any knowledge of Gunton Park will for a moment dispute its fine appearance and flavour. Sir Joseph Paxton must still be included amongst the best Strawberries for sending to a distance, but it is rather particular as to soil, falling altogether in light shallow soil. The Premier, a Herefordshire variety, is very firm, and travels well. In habit of cropping it much resembles Gunton Park, the fruit being borne on stout upright stems, out of the reach of slugs and dirt. Sir Charles Napier is still grown by many market gardeners, and a wonderfully firm fruit it is, cropping heavily when doing well, but it should be planted sparingly at first by beginners, till once it is seen if the soil is suitable. It is useful for following the above-named sorts. As regards late varieties, the new Latest-of-All bids fair to be very profitable so far as cropping size and quality are concerned, but I am not yet able to speak of its texture. My opinion is that Elton Pine will still pay for late market work, as under good culture it crops enormously, the fruit is brilliant and pleasing in colour, though slightly acid, and it is a good traveller."

Those of our readers who do not send to market, but consume the fruit of their Strawberries at home, will duly note the above, but will continue to grow the deliciously flavoured varieties which mostly do not "travel well," although some do. The best of these old varieties are Black Prince, very early; Bicton Pine (white); British Queen, the best of all Strawberries, but particular as to soil; Carolina superba, Deptford Pine, resembling British Queen in flavour; Doctor Hogg, Duke of Malakoff, flesh-red throughout, and richly flavoured, and a good bearer; Dr. Roden's Early Crimson Pine, Filbert Pine, which the late Dr. Hogg, in his *Fruit Manual*, states, is a rich-flavoured fruit, the plant succeeding in light soils—where British Queen is a failure; James Veitch, Keen's Seedling, preferred by some to any other; President, Royal Hautbois, always making sure of having both sexes; Trollope's Victoria, Dr. Roden's The Countess, and Vicomtesse Héricart du Thury, one of the best of the earlies and forcers.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By G. H. MARCOCK, Gardener, Luton Hoo Park, Luton.

Roses.—Remove all decayed blooms, and syringe the plants once a week as previously advised, affording copious supplies of water to the roots. Plants in borders in the Rose-house should be treated similarly, and if the borders are raised above the ground surface, an examination should be made with a small

hand-fork to see that the soil is moist at the roots. Remove all suckers as they appear, and mulch the borders with a few inches of fresh decayed farmyard manure.

Cyclamen.—A sowing should now be made in shallow, well-drained pans, using a light sandy compost. Sow thinly and separately over the surface, and add just sufficient soil to cover the seeds. Place the pans in a temperature of about 65° by night, and from 70° to 75° by day. Plants in cold frames intended for this season's blooms should now be afforded more space. Spray them over lightly with the syringe each morning and afternoon. Attend carefully to watering, and frequently examine the foliage for thrips. In any case, the use of X.L. All Vapouriser occasionally will be safe practice.

Clerodendron Balfouriana.—Remove the flowers from these as they become discoloured, and encourage free growth by occasional waterings with liquid-manure. When growth has ceased, the plants will require a slightly lower temperature, and more air.

Tree Carnations may now be removed to a border out of doors, and the pots plunged to the rims in coal-ashes. Do not sift these before use, unless they are very rough, in which case pass them through a three-quarter inch sieve. This will ensure a free drainage among the plants. It will be found convenient to arrange the plants in beds about 6 feet wide, with a path between each.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

The American Cranberry (Oxycoccus macrocarpus).—This plant grows freely in boggy ground, inclined to be swampy, and on the borders of lakes, where the natural soil is of a peaty nature. It is a hardy, trailing North American shrub, and the fruit is appreciated by some owners of gardens for tarts, preserves, &c., and is fit for gathering in October. The Cranberry should therefore be given a moist situation, excavating about 18 inches of the ordinary garden soil, and replacing it with peat to within 4 or 5 inches of the surface, so as to form a sort of receptacle for water. The soil about the roots should never be allowed to get dry, and especially during summer and early autumn. Pull up weeds as soon as they appear, but on no account use a hoe among the plants, even where space admits of this being done. The object should be to get newly-made beds covered with plants as quickly as possible, and the firmer the soil about the roots and intervening spaces, the sooner will the plants establish themselves over the bed, and yield satisfactory results in the way of heavy crops of fruit.

Peaches and Nectarines.—Trees of the varieties of Alexander, Waterloo, and Amsden Peaches growing against south walls, also Early Rivers Nectarine, will require to have lengths of garden-netting placed over them, and looped up in the bottom, and at intervals between them and the top of the individual trees, so as to prevent any of the fruit that may happen to drop being injured by coming in contact with the net, as would occur were the netting not looped up in the manner indicated. A soft kind of netting is preferable to the hard material of which the ordinary fish-nets are made. Keep the trees well supplied with water at the roots, and wash them overhead every afternoon with clean water applied from the hand garden-engine, where the water is not laid on as ought to be done, in all gardens of any pretensions to completeness. If the trees are not kept washed as described during the hot dry weather which we have been having for some time past, they will soon become infested with red-spider.

THE KITCHEN GARDEN.

By W. POPP, Gardener, Highclere Castle, Newbury.

Rhubarb.—The beds and lines of Rhubarb which will be forced early next year should have the crowns exposed to the sun as much as possible, by removing decaying leaves, weeds, and rubbish, but retaining all healthy leaves and stalks, not pulling any for use, and keeping the plants in growth as long as possible. If outdoor produce is required in early spring, pulling should now be discontinued generally—reserving, however, a few roots for gathering from. If the land be not very rich, which may readily occur if it have been occupied by the crop for some years, afford the later Rhubarb liquid-manure, and thus tender stalks may be gathered till quite late in the autumn.

Dwarf French Beans.—Seed sown at about this date on a sheltered border, and protected from cold,

come in very useful in the late autumn. Some early variety should be chosen for this sowing, such as Sutton's or Osborn's Forcing, Ne Plus Ultra, &c., and the seedlings thinned out to a distance of 6 to 8 inches apart, 3 feet being the space from row to row.

Saving Early Potato-sets.—When storing tubers for planting, do not select the small ones from the daily diggings, these being as yet imperfectly ripened, and not likely to give good results; but reserve a sufficient number of rows or roots, and let these get ripe before lifting them, that is, the skin should adhere to the tubers so that it cannot be easily removed by rubbing. Do not let the sets remain on the ground for days to become green, but store them thinly on shelves in a cool, airy shed for a week or two after lifting them, and also do not put them into large heaps when lifted.

Capsicums and Egg-plants.—These plants succeed in warm districts if good strong plants are planted at the foot of south or west walls; but in other parts it is best to grow them in a cold frame or earlyinery beneath the Vines, if the shade be not too dense, and syringe the plants frequently, to keep them free from insects. If grown in frames, let these be closed early in the afternoon. Liquid-manure may be afforded the plants twice or thrice a week when growing in pots, but less often when planted out.

Grubs in Root-crops.—Where root-crops suffer from wire-worm, maggot, &c., it is a good preventive of attack to use petroleum, in the proportion of a wine-glassful to 3 gallons of water, keeping the mixture intimately mixed by stirring whilst applying it with a rose-can, enough being given to saturate the soil as deep as the roots go. If very badly affected, the crop should be destroyed, and the land utilised for late Celery, or some kind of green crop, seed being sown on a different quarter, there being yet time for Carrots to form serviceable roots by the end of October, if Early Horn or Sutton's Early Gem be chosen.

The Queen Onion, if sown at this date, will form nice bulbs late in the autumn. If the land be dry at time of sowing, let the drills be thoroughly moistened with water or liquid-manure an hour or two previously, and a small quantity of salt and soot applied to the land before the drills are drawn.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Melons.—Plants for fruiting late should soon be planted after this date, as, unless this be done, the fruits are not likely to be good-flavoured. Before planting, thoroughly cleanse and white-wash the Melon-house, making sure that, as far as practicable, red-spider is destroyed. Afford the hills a good soaking of water when the planting is finished, which will settle the soil about the roots, but do not wet the soil round the collar afterwards, these late Melon plants being more than usually liable to get cankered at the ground-level. Melon plants which are setting their blossoms should be kept rather dry at the root, but not so much so as to cause suffering; and when the setting of the blossom is effected, push them on rapidly by closing early after well moistening every surface, the bed, and the foliage of the plants, and allow the heat to reach 95° to 100°. Plants carrying unripe fruits should be liberally watered and top-dressed; but those plants whose fruits show signs of approaching ripeness must be kept rather drier at the root, and the air of the house should also be less moist.

Peaches and Nectarines.—The trees in the early houses from which the crops of fruit have been gathered must be maintained in a clean and healthy condition by the occasional use of the syringe, and by affording sufficient water to the border as will keep up root-action. The necessary pruning, that is, the removal of the current year's fruiting shoots and fore-right and useless wood, and cutting back gross shoots to a lateral, near their base, and laying-in the reserved young shoots, should receive attention. See that all fruits now ripening are exposed to the light, by putting on one side the overhanging leaves, and be sure that the border does not lack moisture, and that the house is sufficiently ventilated. The trees in the later Peach-houses will stand in need of much attention in the matter of keeping the shoots tied in, and superfluous laterals cut off. Now that the sun shines powerfully upon the Peach-houses at a very early hour, no syringing of the trees should be done in the morning, but at closing time only, and if plenty of water be then used, red-spider will be kept

under till the crop of fruit is taken. I go over our Peach-trees every day when the fruit is ripening, and take every one that is fit, nipping it off with a pair of blunt-pointed Grape-scissors, which is better than pulling or lifting them, for however careful one is in removing them by hand, bruising is sure to be caused thereby.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Barford, Dorking.

Grammatophyllums.—Newly-imported plants of *Grammatophyllum Ellisii* that have gained sufficient strength will be pushing their flower-spikes from the base of the young growth, and should be placed well up to the roof-glass in the hottest division, where they will require liberal waterings at the root. *G. multiflorum*, *G. Fenzliaum*, and its variety *Mesuresianum*, are already showing new breaks, and if fresh rooting material be required, it should now be afforded them; or if the plants require more space wherein to root, they may be re-basketed before new roots are made. Shallow teak-wood baskets are preferable to pots, and they should be as small as it is possible to get the plant into. Shake the plant out of the old compost, cut away all dead roots and useless back bulbs, then place it in the basket, using three parts of fibrous-peat to one of sphagnum-moss. Only just sufficient material to hold each plant in its proper place is necessary. After the operation suspend the plants from the roof of the Cattleya-house, and until the root-growth becomes active do not afford much water, the young growths being extremely liable to damp off. As the plants become re-established, remove them to the highest position in the East Indian-house, where the foliage can be placed only a few feet away from the roof-glass.

Catasetums and Cycnoches.—Where suspended from the roof in the hottest division, the *Catasetums* and *Cycnoches* appear to enjoy great warmth and a clear light there afforded. As these species are now rooting freely, and their new growths making considerable progress, they will, owing to their being exposed to plenty of sunshine, require to be examined almost every day, and abundantly supplied with water until after the flowers fade, and the new pseudo-bulbs are matured and the leaves fallen.

Such Cypripediums as *C. niveum*, *C. bellatulum*, *C. concolor*, *C. Godefroye*, and *C. G. leucochilum* having now passed out of flower, the present is a good time to repot them. Plants that are healthy, and have room for further development, should not be disturbed; merely allow them to become rather dry, and they carefully pick out as much of the fine soil as possible, replacing it with fresh compost. The roots of these *Cypripediums* are very brittle, and easily injured; therefore, when re-potting a plant, instead of turning it out of the pot, as is generally done, it is better to break the pot all around, taking away piece by piece, and if the plant is well rooted, this can be done without disturbing the roots or drainage materials. Then place the whole mass in a clean pot of sufficient size to allow space for several seasons' growth, keeping the base of the plant on a level with the rim of the pot. Fill around the roots to about half the depth of the pot with drainage, surfacing it with good fibrous loam, working in amongst it pieces of limestone or tufa rock. It is important that the compost be made very hard and firm around these plants. Before water is afforded, the plants should be allowed to become thoroughly dry at the root, and to remain so for several days. Then dip the plants in a pailful of water, lowering them so as to just cover the surface of the compost, and allowing them to remain there sufficiently long to ensure saturation. During their growing season the immediate surroundings of the plants should be kept moist by damping well between the pots several times each day, but great care should be taken to avoid water getting into the growths. The species named luxuriate in the moist stove or East Indian-house in a position where fresh air can circulate freely around them; and they must be shaded at all times when the sun is bright. Sponge the foliage occasionally, but in so doing great care must be taken not to raise the leaves higher than is really necessary, as they are easily cracked.

Habenarias, &c.—For the purpose of giving contrast in colour, both as regards flower and foliage, *Habenaria militaris* is well worthy of extended cultivation. Other species, equally beautiful and attractive, are *H. carnea*, its pure white variety *nivosa*, and *H. Susanæ*. All of these plants are growing freely, and should be placed well up to the roof-

glass in the East Indian-house, in subdued light. Preserve a moist atmosphere around them, and keep them quite free from insect-pests, which, if not detected in their early stages, quickly disfigure the soft, tender leaves. The plants will now require plenty of water at the root until growth is finished, and the flower-buds commence to open; when the quantity should be gradually reduced.

THE FLOWER GARDEN.

By CHARLES HERRIS, Gardener, Dropmore, Maidenhead.

The Borders of Herbaceous Perennials.—The plants should now be at their best, and will, in order to preserve tidiness and cleanliness, require frequent attention. After the late rains, weeds grew rapidly, and now that a season of heat and dryness has set in, the beds and borders should be carefully hoed over, first hand-weeding the ground if that be necessary. The best kind of implement to use is a Dutch hoe of moderate width. The hoeing, whilst killing the weeds, will render the surface crumbly, and thus prevent loss of moisture by evaporation, and admit air to the roots. It will be found that *Achillea*, *Galega*, *Alstroemeria*, and a variety of other subjects, must be afforded slight support to maintain the flower-stems erect, and for this purpose short neat stakes of Ash or Hazel should be used, and the stems merely looped up to them with raffia or soft, thin string. With a view to prolonging the flowering period of *Delphiniums*, *Galegas*, *Liliums*, *Coreopsis grandiflora*, and others which soon feel the effects of drought, unless heavily mulched on light soils, water should be freely applied to them once a week in dry weather. Besides these, the following herbaceous plants are also now in flower: *Anchusa italica*, *Rudbeckia californica*, *Campanulas* in variety, *Helenium pumilum* and *grandiflorum*, *Centaurea macrocephala* and *C. ruthenica*, *Lysimachia thyrisiflora*, *Ranunculus aconitifolius* (Fair Maid of France), *Monarda didyma*, *Bocconia cordata*, some of the *Phloxes*, the showy and floriferous *Helianthus multiflorus*, *Aconitum bicolor*, *Oenothera Youngi*, *Erigeron speciosum* superbum, Iceland Poppies, *Bupthalmum cordifolium*, *Linaria dalmatica*, the handsome *Pentstemon*, *Cobaea barbatus* and *Richardsoni*, *Aquilegia*, *Cephalaria tartarica*, *Iris Kämpferi* in variety, *Spiraea venusta* and *S. palmata*, the soft yellow-flowered *Lupinus arboreus*; *Lathyrus grandiflorus*, *L. latifolius*, *Verbascum Chaixi*, *Funkia Sieboldi*, *Lychnis chalcidonica*, and *Chrysanthemum maximum*.

Heuchera sanguinea.—This extremely useful and elegant dwarf herbaceous plant should be lifted after flowering, pulled into small pieces, and be replanted if a larger stock of the plant is desired. If clumps of it are allowed to stand, the flowers become fewer, and the plant altogether unsatisfactory. It is a subject that is not fastidious as to soil, although it flowers with the greatest profusion in one that is moderately heavy and moist. The plant having now passed out of flower may be divided during the first spell of showery weather. In dividing the plant, reject pieces with woody stems such as those found in the middle of old clumps. The divisions should be planted not less than 1 foot apart each way if bedded, or they may be dotted about in the front line of the herbaceous border.

Iris germanica.—At the present season the clumps of these plants may be lifted and divided, or the clumps reduced in size. Plants which are taken up and divided become well established before the winter, and the flowering next year is not impaired in the least degree. A slightly shaded border is well adapted for the growth of German *Iris*, which, while they are in flower, are very handsome and effective, and at other seasons the foliage is not unpleasant. Surplus plants may be set out on the margins of lakes and streams, or on bold rockwork.

VARIORUM.

USEFUL PLANTS OF INDIA.—"But while the English have probably introduced a far larger number of flowering garden plants into India than the Buddhists, Arabs, and Portuguese, all put together, and the transcendent glory of the introduction of the febrifuge *Cinchona* trees will for ever be theirs (i.e., Sir Clement Markham's), the Potato and the Apple would seem to be their only contribution to the naturalised food-staples of the country." *Sir George Birdwood.*

ADVERTISEMENTS should be sent to the PUBLISHER.

APPOINTMENTS FOR THE ENSUING WEEK.

GARDENER
TION.—We are

dent, Mr. J. MILBURN, hon. sec. of the Bath auxiliary of this institution, that at the recent horticultural show at Bath the sum of £15 was realised by the sale of Roses and other flowers. The auxiliary was founded in 1893, since which date the sum of £384 6s. has been transmitted to the central fund from Bath and Bristol. Thanks are tendered to exhibitors and others who have kindly given flowers, &c., for this purpose.

BOTANICAL MAGAZINE.—The following plants are figured in the last issue of the *Botanical Magazine* :—

Zamia obliqua.—A fruiting specimen of this New

Helianthus tuberosus, Linn., sp.—Under this heading the editor sums up the history of the "Jerusalem Artichoke," which he refers definitely to the above-named species, and thus settles an old controversy; t. 7545.

Lisochilus milangianus, Rendle. — This is the *Eulophia bella* described in our columns in 1889 by Mr. N. E. Brown; t. 7546.

HORTICULTURAL EXHIBITION AT HAMBURG.—The uninterrupted series of horticultural congresses at Hamburg has been very successful. So far, the spring and two summer flower shows have been held; a third exhibition will open on July 28; another

considerable number of exhibitors, and the congress was participated in by some of the principal botanical institutions and societies of Hamburg, Frankfort, Innsbruck, Berlin, Washington, &c. It thus became representative of the interest so widely felt for the undertaking. Another new idea is the historical section, including representations of parks and gardens from the beginning of the sixteenth century, and enabling visitors to study the characteristics during that period of landscape gardening in France, England, Sweden, and other countries, including, of course, Hamburg. All the pictures came from the Museum für Kunst und Gewerbe. On August 27, the autumn exhibition will open. The



FIG. 9.—POND OF HARDY AQUATIC PLANTS IN MR. OAKES AMES' GARDEN, NORTH EASTON, MASS., U.S.A. (SEE P. 36.)

drawn in the Royal Gardens, Kew
in *Gardeners' Chronicle*, 1882,

—A Brazilian species,
Gardeners' Chronicle,
arrow, orange, lip
dividing into two

—A native of
stalked cordate
of small
volvulus; t.

small show has been arranged, and almost daily the journals speak of new fixtures. Already six minor exhibitions have been held of parlour plants grown by residents of Hamburg. Congresses followed them and were quite successful. I lately visited the scientific exhibits, which were well and attractively arranged. This section includes twenty-two classes devoted to creatures beneficial and injurious to crops, plant diseases, the biology and morphology of plants, the Sugar-cane, artificial manures, economic exotic plants, methods of instruction, especially that of gardening pupils, and ways of combatting the enemies of plants. There were a

programme mentions 439 classes, and, judging from the spring shows, will be well carried out, the committee having even to consider the necessity for erecting some new buildings, the present ones being insufficient. *Ch. de Bossière*.

—An exhibition in connection with the General Horticultural Exhibition now running at Hamburg is to take place from July 30 to August 3. We note in the programme among objects for which prizes will be awarded, tuberous Begonias, and other species of Begonias in flower. Borders or margins, and edgings of these plants will be permitted when these consist of one species or

variety. Carnations in pots with reference to beauty and successful cultivation. There is a section for Pelargonium zonale, and with variegated leaves; and another for cut blooms of Gladiolus, florists' Carnations, herbaceous perennials; a section for pot fruit-trees with fruit on them. These include Peaches, Apricots, Apples, Pears, Vines grown without artificial heat, also for the best assortment of Vines in which there is no restriction imposed as to heat. There is a number of classes for collections of hardy fruits in season, and for Peaches, Nectarines, and Apricots. We note about a score of special prizes of honour, ranging from 20 marks to 500 marks, which are offered for a variety of objects shown on this occasion.

AN AUSTRALIAN NURSERY.—We have received from Messrs. L. SUMMERLIN & Co. a series of photographs representing plant-growing and other departments in their nurseries near Brisbane, Queensland. One of these illustrates a Rose nursery of seventeen acres at Mount Gravatt, in which a fine bed of Tuberoses is seen, which commenced to flower in the open air in November last; (2) a large bed of Eucharis plants, in a house in the nursery at Woolloongabba; (3) a general view of the same nursery; (4) a house, about 66 feet long and 18 feet wide, containing miscellaneous plants; (5) two beds of Roses in the nursery at Mount Gravatt, said to have been budded in November last; (6) masses of Violets, Ericas, and Camellias, in the same nursery; (7) a house, containing hard-wooded plants, at Woolloongabba; (8) bed of Tuberoses, intended for winter flowering, planted in March last, in a situation where shelter can be afforded when this becomes necessary; (9) a view of the business premises in Queen Street, Brisbane. The photographs were taken in April, and we are informed that Mr. L. SUMMERLIN, who is desirous of retiring from business, is about to dispose of the establishments.

MR. THOMAS CHRISTY informs us that he has removed his collection of plants from Sydenham to Wallington, Surrey, to which place he is desirous that his correspondents should address post-packages of plants and books, and thus avoid the expense and delay of re-addressing them.

HORTICULTURE FOR CHILDREN AND ARTIZANS.—Our correspondent, M. C. DE BOSSCHERE, has published a brochure, entitled "*Culture des Fleurs par les Enfants et par les Ouvriers*." In this he comments on the attention paid in England to allotments and other small spaces cultivated by working-men, and to the encouragement given to children's gardening. M. DE BOSSCHERE suggests that, as profit and moral and physical benefit are the rewards of this rural occupation, horticulture on a small scale should receive that attention universally which is now only given to it in a few scattered localities on the Continent.

"OUR STAR-LIT ERA."—Mr. W. B. HARTLAND of Cork has issued, under this title, a nicely got-up handbook devoted to "Conference Daffodils," and including verse and prose lines appropriate to this—a special Jubilee issue. We wish more particularly to call attention to the drawings of Daffodils, which form the most attractive feature of this Album. They are not merely pleasing as pictures, but accurate, and their number—about sixty—is representative of the many varieties of Narcissus now under cultivation.

STOCK-TAKING: JUNE.—It will not be out of place here to briefly record the fact that the revenue returns for the past three months (the first quarter in the financial year) show an increase over the same quarter in last year of nearly a million sterling. Good news this for the Chancellor of the Exchequer. The increase is spread over every item excepting that headed "miscellaneous." As for the trade returns for June, there have been two hindrances to a "record" result—the occurrence of the Whitsuntide holidays, and the magnificent and universal Jubilee celebration. Still, with all these—in some sense—drawbacks, the imports for the past month amount to £36,321,809, against £35,229,255 in June, 1896; showing a gain of £1,092,554—a very fair show

indeed. In the section "animals" there is a very large increase; so also is there in the matter of food generally, Canada sending an enormous supply of cheese, and America great store of hams. There was also a fine show of butter; wine also looked up. We cannot expect much of a show from Coffee in the face of the various popular competitors for a place on the breakfast-table; and though tea does not foot up so largely in the past month, still it continues first favourite. There was an up and a down movement in the various materials for textiles, but none of startling importance. One noticeable increase is that of sawn timber: the streets in all our principal cities having afforded evidence of this. The following are the are giving usual extracts from the "summary" table:—

IMPORTS.	1896.	1897.	Difference.
Total value ...	£ 35,229,255	£ 36,321,809	+1,092,554
(A.) Articles of food and drink—duty free ...	12,504,956	12,879,583	+374,627
(B.) Articles of food and drink—dutiable ...	1,806,000	1,754,745	+148,736
Raw materials for textile manufactures ...	4,646,048	4,498,012	-148,036
Raw materials for sundry industries and manufactures ...	4,499,017	5,025,197	+526,180
(A.) Miscellaneous articles ...	1,246,702	1,044,379	-202,323
(B.) Parcel Post ...	92,424	49,998	-42,426

It is not unworthy of record here that whilst the demand for Japanese teas is steadily on the decline, that for Ceylon and Indian is rapidly increasing in other countries—notably, we are told, in the United States. Nor should we omit to note the falling off in the importation of cereals during the past month; this, however, will probably be corrected ere the present month closes. A most welcome addition to the fruit supply in June was an additional £150,000 worth of Oranges; and this brings us to the imports of fruits, roots, and vegetables for June as follows:—

IMPORTS.	1896.	1897.	Difference.
Fruits, raw:—			
Apples ... bush.	37,917	66,669	+28,752
Cherries	116,356	158,056	+41,700
Plums	7,466	14,773	+7,307
Pears	8	52	+44
Grapes	3,987	4,469	+482
Unenumerated ...	159,512	159,886	+374
Onions	366,339	221,824	-144,515
Potatoes ... cwt.	1,151,731	1,138,938	-12,793
Vegetables, raw, unenumerated ... value	£192,259	£208,171	+£15,912

It seems a pity that we can procure only so unsatisfactory a record of imported fruit as that under the heading "unenumerated," knowing the efforts put forth by our Continental friends to get early on the London market. All in good time, possibly. The record of imports for the past six months shows a total of £225,435,246, against £216,503,033—a gain of £8,932,211. Coming now to the

EXPORTS.

we find that the various jubileations have been operating here to some extent; thus we find a falling off amounting to £1,470,064, the figures for the past month being £19,089,997, as against £20,560,061. The greatest falling off is in textiles (£942,000). Affairs in the East, from Calcutta to Constantinople, have surely told on all the markets, and the tinkering with the United States tariff has not given encouragement to speculation on either side of the Atlantic. With but three exceptions, depreciations have to be recorded in the various sections into which the exports are divided. The six months show a total export of £117,410,452, against £119,145,740—a falling off, as compared with June in last year, amounting to £1,735,288. As a matter of course, this state of things will soon be altered, if we can steer clear of lock-out and strike!

"SYNOPTICAL FLORA OF NORTH AMERICA."

—A further instalment of this great work, commenced by the late ASA GRAY, has just been issued (London: WESLEY & SON, 28, Essex Street). It is a large octavo of about 300 pages, and completes the first part of the first volume. It comprises the Orders from Caryophyllaceæ to Polygalaceæ. The Gamopetalous Orders were published by Dr. GRAY himself in 1878 and 1884 respectively. The Thalamifloræ are now complete, Dr. GRAY's work having been continued by the late Dr. SERENO WATSON, Dr. B. L. ROBINSON, and others. The typography and arrangement are very convenient, and the index full. When it is remembered that the area dealt with includes the whole of North America outside Mexico, the delay in publication is fully accounted for.

INSECTS OF A LONDON BACK-GARDEN.

—Papers upon this subject, written by Mr. F. ENOCK, have lately appeared in our contemporary, *Knowledge*. It may well astonish those whose eyes have not been already opened to the stores of scientific treasures often concealed in unlikely places, to hear how many interesting and unexpected marvels Mr. ENOCK has brought to light. It is a bad workman who quarrels with his tools, and the too-zealous entomologist, longing for a country life, would do well to search his own city garden. By night and by day he will find insect treasures "under any old musty board, an odd brick-end, or a heap of leaves." The articles here referred to are pleasantly written and illustrated, and their study should lead the really earnest beginner on to the consideration of larger works on the subject, and, above all, should tempt him to seek and find for himself.

CHISWICK.—A large gathering of members of the various committees visited the garden on Wednesday, on the invitation of the council. Considering the heat, drought, and wind, the garden was found to be in excellent order, and reflecting great credit on Mr. WRIGHT and his staff. The luncheon, presided over by Sir TREVOR LAWRENCE, was a most successful "function." In the afternoon an address was delivered by Dr. MAXWELL MASTERS, with a view of eliciting a discussion on the methods to be adopted for the future development of the garden. A discussion followed, in which Sir JOSEPH HOOKER, Dr. RUSSELL, Dr. FLOWRIGHT, and the PRESIDENT, took part, but unfortunately no speaker treated the matter from the standpoint of the practical gardener. We may allude more fully to the subject in a subsequent issue. Letters were read from M. DE VILMORIN and Mr. MALCOLM DUNN, speaking in high terms of the value and impartiality of the trials conducted in the garden.

VICTORIA MEDALS.—A number of letters have reached us on this subject, a few written in a strain of indignation, but mostly treating the humorous side of the question. Considering the delicate nature of the circumstances, and the excellence of the intention, it seems to us that a discreet silence will be most acceptable to all parties concerned.

EXAMINATION IN HORTICULTURE.—The following is the Report presented to the Council of the Royal Horticultural Society by the examiners:—We beg leave to report that we have examined the papers submitted to us—in all 184. Of these we selected eighty-nine as worthy to be placed in the 1st class, fifty-five in the 2nd, and twenty-eight in the 3rd. The remainder, twelve, are not placed; the number of marks attained being below a hundred. The distribution of the examinees were 169 in England, six in Scotland, one in Ireland, one in Wales, and seven gave no address. The present examination shows a very considerable improvement upon the results of that held in 1896. This will be apparent from the following comparison of percentages:—Those not classed are only twelve in number, or nearly one-third of that last year (thirty-four). The percentage of the third class (100 to 149 marks) has fallen from 32.2 (1896) to 15.2 (1897). The percentage of the second class (150 to 199 marks) is nearly stationary, viz., 34.8 (1896); 29.8 (1897). The percentage of the first-class (200 to 300 marks)

has made the astonishing increase from 10.5 (1896) to 18.3 (1897). These results are most encouraging. Speaking generally, the answers are extremely well done. The information is accurate upon the whole, and the subject-matter well expressed. Perhaps the "Practical Horticulture" showed, as might be anticipated, a slight superiority over the "Elementary Principles." GEORGE HENSLow, JAS. DOUGLAS.

PUBLICATIONS RECEIVED.—*The Forester* (Princeton, New Jersey), June 1.—*Agricultural Bulletin of*

easily-grown nut been everywhere available?" The cultivation of it is to be widely encouraged. Reports of a successful flower-show and other notes are included in the issue.—*Bulletins* 142-4 from Michigan State Agricultural College, include a report of Small Fruit Trials at the college, Fruit Tests at South Haven, and Vegetables old and new.—*Agricultural Gazette of New South Wales*, April.—*Bulletin* 114, New York Agricultural Experiment Station. This is an issue devoted to the cultivation of Gooseberries, and the remarks of the writer (Mr. S. A. BEACH)

naire d'Horticulture et de Jardinage. This work has now progressed as far as the publication of the article on Samydacées.—*Reports of the Agricultural Assistants at Cape Town, Graham's Town, and Stellenbosch*; also, *Report of the Government Wine-farm, Groot Constantia* (Cape of Hope, Department of Agriculture). Both these publications refer to the unfortunate appearance and increase of Phylloxera in the Stellenbosch division, and to the great fears entertained of the rapid spreading of the pest, which has already positively destroyed whole vineyards, and "threatens more and more the existence of an agricultural industry which cannot be well substituted by any other." American Vines are being largely introduced, but the demand is likely to be far greater than the supply.

HOME CORRESPONDENCE.

PEACHES AND NECTARINES IN THE OPEN AIR.

There appears to be a very good crop of Peaches and Nectarines in the south, but in several gardens I have noticed the foliage terribly affected with blister (*Exoascus deformans*), so much so that when the affected leaves and shoots have been removed the trees have been almost nude of foliage. I once thought that ill-ripened wood was most liable to this disease, but this season ripe and unripe shoots are equally bad. Is there anything which might be applied early to the leaves that would prevent the malady spreading? [Try weak Bordeaux Mixture in spray as a preventative.] The only remedy I have ever practised was to remove the affected parts and burn them as soon as possible, after which I have syringed the trees with water containing soft-soap and sulphur. Cold nights are undoubtedly favourable to the disease. In the case of trained trees, select some young shoots to take the place of those to be cut away after fruiting, and when the selected ones are about 4 inches long, tie them about 2 inches above the base to the shoots they spring from, so that they may be afterwards laid in straight and without breaking. Trees require to be attended to in this particular several times during the season. At the same time, a certain amount of pruning should be done, so that at the end of the season only sufficient shoots to retain then remain. If the crop requires to be thinned, it should be commenced early, by removing only those that are ill-placed; or where they are uncommonly abundant, the final thinning should just precede the stone process. Some gardeners boast of the remarkable number of Peaches their trees bear, but a fairly good crop of fine, large, highly-flavoured fruits, is the most satisfactory in the end. Black and green-fly and red-spider are the most troublesome pests; but with a few good syringings of quassia-water, very little after-trouble will be experienced. H. Markham.

SWEET PEA "CUPID."—A few days ago, when visiting Mrs. Price's garden at Pen-Moel, near Chepstow, I was surprised to have some excellent clumps of this variety pointed out to me by Mr. Simpson, the gardener. He had planted the clumps in various positions, and each of them was a mass of blossom. Some of the clumps were also podding freely. Four seeds were sown in a 5-inch pot in early spring and placed in a frame, and after being thoroughly hardened-off were planted-out, but great care was necessary to prevent slugs from devouring the dwarf neat clumps. The garden at Pen-Moel is practically a limestone quarry, and before trees and shrubs could be planted, the rock had to be blasted, and fresh soil carted in. The soil is highly impregnated with lime, and to that fact I have no doubt Mr. Simpson may attribute his success with this beautiful novelty. R. Turnbull, Beachley, Chepstow.

APRICOTS, DAMSONS, AND CHERRIES A FAILURE.—The branches of Apricot-trees here die off annually to a great extent, and although they usually give a fair amount of blossom, and are protected with fishing-nets, &c., in the usual way, the trees only set a few fruits, and the greater part of them generally rot as soon as they commence the second swelling. The variety throughout is Moor Park. They are trained on a good south wall, and the roots are in a limestone soil. The trees have been planted about sixteen years. Some have died, and have been replaced with young trees in the best loam at command, with the addition of brick-rubbish; but notwithstanding attention to mulchings, have gone off in a similar manner. I have had experience in growing Apricots in various parts of the

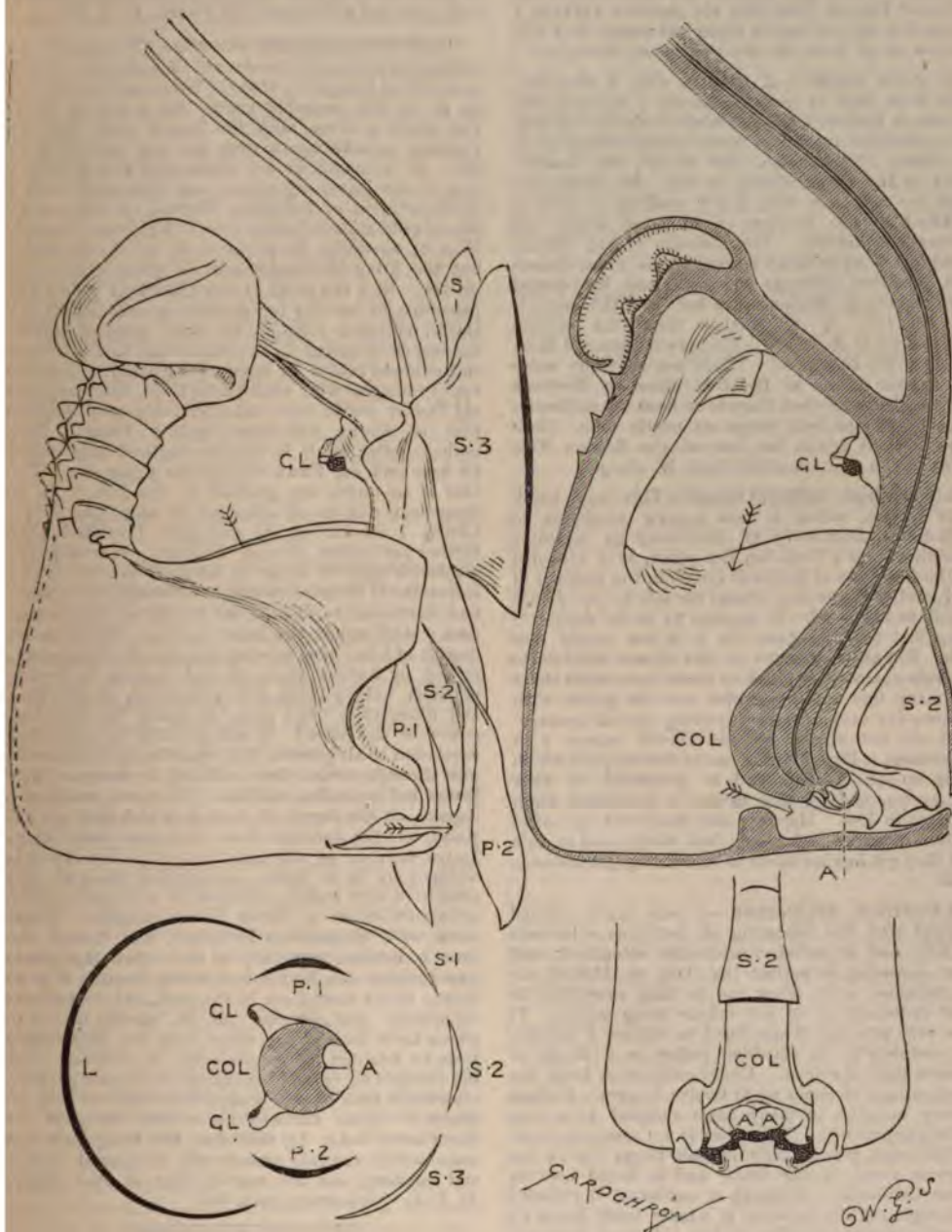


FIG. 10.—DISSECTED FLOWER OF CORYANTHES FIELDINGII. (SEE P. 30.)

Explanation of figure: s, 1, 2, 3, sepals; p, 1, 2, petals; col, column; gl, glands; a, anthers; l, lip.

the Malay Peninsula, for April. This is devoted to reports and notes upon Spices: Nutmegs, Cloves, Cinnamon, Cassia, Sirih, Cucebs, Pepper, Kadok, and others.—*Agricultural Journal, Cape of Good Hope*, includes reports of agricultural experiments and experiences both with crops and stock.—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, January to March. Contains an account of *Cyperus bulbosus* and of the preparation of "coffee" and "chocolate" from the nuts of this plant. It is queried "would millions have died in India during the last famine had this prolific and

should prove valuable to all growers. The carefully-prepared plates show the peculiarities in the shape and size of the berries of the different varieties treated of, the effects of pruning, &c.—*Erythea*. This West American and general journal of Botany, edited by W. L. JERSON, publishes, in the May issue, an illustrated article on *Boschniakia strobilacea*.—*Wiener Illustrirte Garten-Zeitung*, June.—*The Tropical Agriculturist* (Colombo), June, contains, as usual, much appropriate matter.—*Favourite Flowers of Garden and Greenhouse*. The forty-fifth part of the fourth volume of this publication is now ready.—*Dictio-*

country, and in many kinds of soil, and have seen gumming and dying-off of branches, but never to such an extent as here. Again, there are three large Damson-trees (I am unable to give the variety), in bush form, that are equally disappointing. They were planted, I believe, at about the same time as the above trees, and have never given satisfaction. They flower fairly well each year, but these fail to set, and many of the young shoots made this year are dying off now. Young trees of the Farleigh variety, when not hindered by frost, produce good crops in the same kind of soil. Morello and sweet Cherries growing on a north wall give a grand display of flower, but each year only a poor crop of fruit is the result. The shoots on these die in a similar manner. The Cherries are trained on a galvanised wire trellis, but the Apricots with nails and shreds. On first noticing this, some four years ago, I was of opinion that the wire was responsible for the mischief in the case of the Cherries, but found it was not so, as the greater part of the dying shoots did not touch the wire. Apples and Pears, taken as a whole, do very well indeed in this soil, and heavy crops of Plums have been obtained from trees trained on walls. As it is desired to improve matters respecting the three first-named fruits, if some of the numerous correspondents to the *Gardeners' Chronicle* having had experience in limestone soil, will kindly give a hint or two as to what additions can be made to the soil, or if other varieties of Apricots would be more likely to succeed, it would hasten matters to better results, as much time is often lost in trying experiments. *R. D. Long, Lincoln, July 13.*

BUD OR SEED VARIATION IN PYRUS JAPONICA.—I was interested in Mr. Parkin's note on this subject on p. 348, last vol. of the *Gard. Chron.* Though I grew the plant for many years, I noticed no transition of scarlet to pink, nor any other change of colour or of type such as he describes. But as this sport has developed and repeated itself, it is probably sufficiently fixed for propagation purposes. I have found *Pyrus japonica* very variable from seeds. Sow any colour, white, scarlet, pink, you will probably have plants of all colours from each, with not a few, more or less, novel, intermediate hues. Seedlings also vary widely in vigour, and habit as well as colour. The white fringe to the pink flowers should prove a welcome addition. *D. T. F.*

SPIRÆA ARGUTA ZABEL (S. MULTIFLORA × THUNBERGI).—I fully agree with Mr. W. J. Bean, that *Spiræa arguta* is the most beautiful of all early-flowering *Spiræas*. I have also recommended this *Spiræa* at various times as one of our best and most useful early-flowering shrubs both for forcing and for garden decoration. I wish, however, to correct a mistake made by Mr. W. J. Bean in saying that *Spiræa arguta* is a cross between *S. multiflora* and *S. media*. *S. arguta* is a cross between *S. Thunbergi*, Sieb., and *S. multiflora*, Zabel (being itself a cross between *S. crenata* and *hypericifolia*), and Mr. W. J. Bean was right in saying that *S. Thunbergi* seems to share in its origin. *Spiræa arguta* was raised by Mr. H. Zabel from seed of *S. multiflora*, perhaps occasionally fertilised with pollen of *S. Thunbergi*, and fully described by him as a hybrid between *S. multiflora* and *S. Thunbergi* in his book, *Die strauchigen Spiræen der Deutschen Gärten*, p. 44. This book dealing with all the cultivated species, crosses, and varieties of *Spiræas*, is a very useful and indispensable one for all who wish to study this difficult genus, so much enlarged with numerous varieties and hybrids of garden origin. Mr. Zabel has carefully studied this genus during twenty years, and cultivated all the species, crosses, and varieties he could get from everywhere in the botanical garden of the Academy of Forestry at Münden (Hanover); he has also raised a large number of crosses and varieties. The garden of Münden contained, at the time when Mr. Zabel had charge of it, one of the best and largest collections of trees and shrubs existing in Germany, and I often paid a visit at that time to Mr. Zabel and his garden, where I always found a wealth of interesting things for a lover and student of trees and shrubs. *A. Rehder, Erfurt.*

WASPS AND ROSES.—The cause of the condition of the enclosed Rose leaves has puzzled me for some days. I thought that the oval and disc-shaped pieces taken out of the leaves had been consumed by some of the looper caterpillars; but I had the pleasant and interesting experience of sitting on the lawn this afternoon and witnessing the exact *modus operandi* of the marauders, who are wasps. I watched the performance by seven different individuals, and this is

how they uniformly went about it: the operator lights on the edge of the leaflet he selects for the purpose, with his head pointing to the base of the petiole, he then commences cutting with his mandibles with a scissor-like action, in a circular direction, first towards and then away from the mid-rib of the leaflet, remaining on the piece he is cutting out. This piece he deftly tucks under itself, doubling it as he proceeds, and holds it in this form to the end of the operation, and in this form he ultimately flies away with it. Of course, in making the sweeping cut he ends with his tail pointing to the attachment of the petiole to the stem of the plant. What do the wasps use this material for? A singular feature of the matter is that they confine their attention to one particular kind of Rose (the old *Baronne Prévost*, I believe it to be): *Gloire de Dijon* and others they will not look at. *G. Paul, St. Mary's Avenue, Harrogate.*

A JULY FROST.—A frost in July in the Midlands is as rare as snow in harvest; but such was the case at Beckford, Gloucestershire, on the 8th inst. The terrestrial radiation thermometer belonging to Mr. Slade, F.R.Met.Soc., fell to 31°, the thermometer in the screen falling to 36°. Mr. Slade says there has not been such a low reading in July at Beckford in the fourteen years over which his observations extend. The altitude of the station is 120 feet. At Bredons Norton, three miles distant from Beckford (altitude 200 feet), our Kew-tested thermometer in the screen, 4 feet from the ground, fell to 42°, or 6° higher than the screen-temperature at Beckford. We have no exposed thermometer on the grass. There are generally more and severer frosts at Beckford than at Bredon's Norton, although when there is no frost the minimum and the mean of both places are nearly alike. Both these stations are at the base of the Bredon Hill, which has an altitude of 979 feet. *W. Burgess.*

LISIANTHUS RUSSELLIANUS.—This very handsome species, which is now known according to Nicholson's *Dictionary of Gardening* as *Eustoma Russellianus*, is a Victorian Era plant, as it bloomed for the first time at Bothwell Castle in the summer of 1837, and seed was first offered for sale by Mr. James Outhill in 1841—42. It appears to be in danger of being lost to cultivation, for it is now rarely met with. But then it is one of the plants difficult to cultivate successfully; and in these days, when there are many fine subjects which can be grown with comparative ease, plants requiring special management do not appear to find favour except with enthusiasts. Happily, it is one of the subjects which crops up occasionally, and is presented to view well grown, and by this means is preserved from being quite lost. Happily, also, there are botanical gardens in which such plants find refuge, and in this way they get handed down to succeeding generations. *R. D.*

LATHYRUS SPLENDENS.—I was much pleased to read that the blooming of *Lathyrus splendens* at Kew had attracted considerable attention; and your engraving is perfect (fig. 106, p. 315 of our last volume). only, allow me to take exception to your statement as to the colour being scarlet. It is a very peculiar colour, hard to define, I believe, but certainly to be classified rather as a shade of crimson than of scarlet. Under cultivation here, the bunches have at times up to twelve flowers. Foliage is very variable, in many cases reduced to a true filiform appearance. This plant is not common at all in California, growing only in San Diego Co. at the extreme south of our State, and is found also in lower California. Although a native of the desert high region of the interior, it adapts itself freely to liberal watering, provided it has sufficient drainage, and in this case it will keep growing and blooming all summer, and not die down as it does in its native habitat, where it is essentially a winter bloomer. Frost is not unfrequent there, and I believe the plant will prove hardy in many parts of England, at least, where they have made a success with *Fremontia* and *Romneya*. Under cultivation, at least, seed is very sparingly produced, and nobody in this country has ever succeeded in propagating it from cuttings. *Dr. F. Franceschi.*

FRUITS OF THE VICTORIAN ERA.—There is much force and truth in what your correspondent "H. H. R." says on Pears. But then the difficulty often lies between making a catalogue or doing seeming injustice to old favourites through what may appear disparaging omissions. The case is worse, however, when such fine varieties as *Marie Louise*, *Jargonelle*, *Williams' Bon Chrétien*, *Glout Moreau*, *Duchesse d'Angoulême*, are underrated. As a suc-

cessful caterer for large families, I should have been nowhere without these Pears. But Figs fare worse than Pears, if a summary of sorts grown, and which had not only maintained but added to their popularity, were intended. But if Figs introduced during the Victorian Era were meant, then it might be quite right to exclude the *Brown Turkey*, that is, *Lee's Perpetual*, and *Dr. Hogg* adds fifteen other aliases. This is probably the oldest, as it is by far the best Fig we have in cultivation, either for out of doors or under glass. There are other good Figs, but they are, as it were, the fringing of the dessert. For good measure, pressed down, running over, bursting wide open with luscious pulp, and never failing of supplies in possession and prospect, give me the *Brown Turkey* first, last, and all through the season. *D. T. F.*

FIRING STRAWBERRY PLANTS.—The answers to correspondents in the *Gardeners' Chronicle* are mostly so sound and practical, that the following instructions on p. 12 will probably startle not a few growers. For plants overrun with the fungus pest, *Botrytis vulgaris*, sprinkle straw over the bed and set it on fire. At a month or six weeks after this is done, a crop of new leaves will appear, and then spray with a dilute solution of Bordeaux Mixture, or with a solution of potassium sulphide, 1 oz. to 3 gallons of water. Most of us might be prepared to try the spraying, but the firing of Strawberries is quite a different matter. How the great Doctor (Lindley), lashed the practicals on his day for mowing or slashing off the leaves, runners, fungoid, or other pests of Strawberries, condemning all such short cuts to cleanliness and renewed health as ignorant barbarity. One can readily imagine with what gusto, force, and irony the old Doctor would have exhausted his unique collection of strong adjectives against firing. But, perhaps, after all it is of more practical importance to hear and see Strawberry plants under fire. The idea is so novel, the practice on the face of it so dangerous, that to all disposed to adopt "G. M.'s" advice, I should say do not until furnished with further particulars, stronger evidence. It would take a thickish layer of straw to burn off the leaves and leaf-stalks of Strawberry plants with sufficient energy and fierceness to destroy the vitality of this fungus pest. And unless the latter is done, where is the benefit of firing over mowing the tops to the ground, raking or forking them off and making a bonfire of them, heavily laden with vital spore, of such heat and intensity as must make an end of the growing-power of the latter? It will probably be a startling revelation to all growers that Strawberry crowns will pass through surface fires sufficient to consume their leaves and leafstalks, and live. Of course, much may depend on the degree of heat to which they are exposed, and the duration of it. But even Strawberry-leaves overrun to the uttermost with the *Botrytis vulgaris* are by no means inflammable material, and present a very striking contrast to common bracken or mature stems or leaves of Pampas-grass. These burn with tremendous fierceness, and though the heat is intense, especially of the latter, the plants pass through the fiery ordeal safely, because it is so short; it is a mere flash in the root, and root-stocks uninjured. But perhaps "G. M." merely means to pass a mere flash of dry straw over the Strawberry beds to frighten the fungus pest. It is certain from his receipts for repeated sprayings of the new growths afterwards that he hardly expects to roast the fungoid spores to death through his surface firing of his Strawberry beds. In that case, the firing does not seem worth the very serious risk of roasted crowns and runners, nor the candle, that is, the straw. *D. T. F.* (See article on p. 36.)

NURSERY NOTES.

MESSRS. CUNNINGHAM AND TRAYER,
EDINBURGH.

ON the occasion of a visit paid to this nursery on May 29 last, the following species and varieties of plants were remarked by the writer in bloom:—*Anemone palmata alba*, *Genista hispanica*, *Primula rosea*, *Sedum acre aureum*, *Hutchinsia petraea*, like a tiny Iberis; *Euphorbia epithymoides*, a compact, dense shrub, very strong, with a profuse display of golden bracts; *Thalictrum aquilegifolium rubrum*, *Corydalis nobilis*, *Scilla esculenta*, *S. e. minor*, *Ranunculus speciosus flore-pleno*; *R. aconitifolius flore-pleno*. A fine lot of both, popularly known in many rural districts as the white and yellow

Bachelor's Buttons, *Anemone sylvestris*, pure white; *Cytisus Ardoini*, an extremely pretty dwarf species, much resembling a *Genista*; *C. præcox*, a very graceful light lemon-colour flower, well adapted for the open, and much grown in pots, window-boxes, and in conservatories; Golden-leaved Marjoram, the most thoroughly golden of all herbs in the spring, but, like Mint and Thyme, losing something of its brightness as the season advances; capital stock of *Trollius europæus*, flore-pleno; *Doronicum plantaginum* var. *Harpur Crewe*, *D. p.* var. *Clusii*, and *D. p.* var. *excoelum*.

Among the fine collection of *Iberis* noted here, the best were *I. coriifolia*, *I. sempervirens*, *I. superbum*, *I. capitata*, and the improved variety of *I. sempervirens* Garroxiensis, a variety with smaller flowers, the racemes being much lengthened in the process of blooming, and the flower season greatly prolonged.

A good collection of *Funkias* is also grown here, the foliage adding much to the interest and richness of the grounds in May: *Funkia ovata*, *F. undulata* variegata, *F. alba marginata*, and *F. Sieboldiana*, were conspicuous.

Here, too, a strikingly distinct and handsome fine-foliage, bronze-leaved plant was noted, *Rodgersia podophylla*. The plant was not yet in bloom; but its long-stemmed curious-shaped leaves, reminding of a bronze-coloured Rhubarb, forming into a sort of crown of four leaflets on the surface, is a new feature in form and colour among herbaceous plants at this season of the year. It is a native of Japan, and was introduced in 1800, though it is seldom met with in gardens or landscapes. Among the fine collection of Saxifrages in bloom, among the most distinct and showy were *S. purpurascens*, *S. pectinata*, *S. aizoon*, and *S. sarmentosa*. *D. T. P.*

CARNATIONS AND PICOTEES AT MESSRS. J. VEITCH & SONS, CHELSEA.

The usual display of these favourite flowers is now at its best at the Royal Exotic Nursery, and numerous novelties were noted in the collection. All of what are best among older varieties are to be found, and for these we must certainly claim a preference; the plants in most instances being of short growth with robust habit, plenty of shoots, great floriferousness, and flowers that endure bright sunshine without injury for a long period of time.

Of novelties, good flowers were remarked of the selfs Garville Gem, a heliotrope-coloured flower, and the plant of better constitution than Theodore, besides being free of growth; Her Grace, a delicate flesh colour changing to white, large and full, and capital, as seen under glass; Sea Gull, also flesh-tinted, of fine form, and robust; and Sweet Briar, pale red with finely formed petals and flowers, which are of great size. New yellow ground Picotees were noted in Eldorado, a large, perfect flower, edged with rosy-red; Golden Eagle, a richly tinted flower edged with red, and of great size; Voltaire, a large full flower, distinctly edged with rose-pink.

Carnations of recent introduction, and mostly of Mr. Martin Smith's raising, were Cardinal Wolsey, a yellow-ground flower of the Victory type, but much superior in form and colour; Duke of Orleans, a large yellow flower of excellent form; King Arthur, a very distinct crimson-scarlet bloom, the perfection of form; Princess May, of the Souvenir de la Malmaison type, deep rose-coloured, and of which type The Churchwarden is another. A very beautiful variety was likewise remarked in Waterwitch, a delicate flesh-coloured flower.

The collection affords a capital example of what may be done in a London garden with Carnations and Picotees, by intelligent cultivation.

Obituary.

JOHN FINLAY.—We regret to record the death, at the age of sixty-one years, of Mr. John Finlay, on Saturday, the 3rd inst., at Meldon Park Gardens, Morpeth. The deceased was a well-known gardener, whose days were chiefly spent in his native county, Northumberland, first at Netherwitton, with his father as a drainer, afterwards as a garden-

apprentice at Mitford Hall. After leaving Mitford, he came south to gain experience, and returned to the North about thirty years ago, to take charge of the gardens at Meldon Park, serving the late Mr. J. Cookson, Mr. J. Blencowe Cookson, and latterly, Mr. R. Clayton-Swan. The *Newcastle Journal* says, in its issue of the 6th inst., "As an authority on natural history, he was known throughout the country. When little more than a boy he made a well-nigh complete collection of all the flowers and plants to be found in the county. These were all beautifully mounted, named, and anything special about them carefully written down. Botany he relinquished, however, for entomology, which he pursued with enthusiasm till compelled this spring, through failing health, to cease collecting. For many years the half of his nights might be said to be spent outside in pursuit of his hobby. His cabinets contain over 1500 distinct species of British moths and butterflies, with many duplicates of all the leading varieties. As far as the North of England varieties are concerned, they are complete. The collection is justly considered one of the finest in the country in private hands. He leaves a widow, four daughters, and an adopted daughter."

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 13.—An ordinary meeting of the committee was held on Tuesday last in the Drill Hall, Westminster, when the exhibits were considerably less numerous than for some time past. Collections of hardy flowers were again staged by many firms, indeed, on this occasion, they formed the major part of the show, and the same species of plant was seen in most of them. These bunches of cut-flowers shown again and again are hardly so interesting as exhibits at these meetings of the Royal Horticultural Society ought to be. Very few novelties in plants were staged, but in a few instances awards were made as will be seen below. Orchids were few. Before the Fruit and Vegetable Committee there were shown a number of seedling varieties of Peas, a few new Melons, and a collection of vegetables, which deserves to be described in most appreciative terms, as it exhibited the result of very exceptional culture.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. Jno. Fraser, Chas. T. Drury, H. B. May, Chas. E. Shea, W. Bain, H. J. Jones, D. R. Crane, E. Beckett, Geo. Gordon, J. Fraser, R. M. Hogg, and Jas. Walker.

Mr. B. R. DAVIS, Yeovil, staged single blooms of double-flowered tuberous Begonias. Though the method of exhibiting them upon brown-coloured boards is not particularly tasteful, the blooms sufficiently indicated that many of the varieties in crimson, rose, pink, yellow, and white, were meritorious ones. An Award of Merit was recommended to the variety Miss Griffith, a large double, tinted white flower with a delicate obscure yellow centre, the margins of petals prettily crimped. Roland Yorke, a rather loose-flowered salmon-rose variety, and J. Davis, fine scarlet-crimson flower, deserve mention also. Of each of the three varieties last-named, a plant was shown (Silver Banksian Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, showed a group of double-flowered Begonias, consisting of plants five months old. These were in 5-inch pots, and carried a few good flowers upon each. From seed sown in February it is evidently possible to obtain medium-sized, well-flowered, decorative plants by July (Bronze Banksian Medal).

Ferns were again shown by Mr. H. B. MAY, Dyson's Lane Nurseries, Edmonton, in a group consisting of admirable but small specimens of a number of choice varieties. *Nephrolepis exaltata*, and the varieties *multiceps*, *furcata*, *pluma*, also *N. cordifolia*, and several varieties, *N. Duffii*, a dwarf-growing pretty species; *N. Philippine*, *N. recurvata*, *N. Barteni*, *N. rufescens tripinnatifida*, and others, illustrate the number of species shown. Aspleniums in endless variety were included, and a selection of species and varieties of the effective *Gymnogrammas* (Silver-gilt Flora Medal).

A group of plants of the magnificent white flowering *Watsonia Ardeni* was shown by Messrs. F. SANDER & CO., St. Albans. This beautiful Cape bulbous plant was noticed at the last meeting in the Drill Hall, when fewer plants were shown.

A beautiful collection of bunches of Sweet Peas was exhibited by Mr. H. ECKFORD, of the celebrated Wem Nurseries in Salop. Besides each bunch being representative of a choice and new variety, they were staged in the most tasteful manner. Mr. Eckford knows how to raise and cultivate Sweet Peas, and more than that, he knows how to display them to the best possible advantage.

Messrs. WM. PAUL & SONS, Waltham Cross, Herts, exhibited a nice collection of Rose blooms, some of them in bunches, and all representative of sorts sent out during the last few

years. Sylph (W. Paul & Son), a pink Tea, of pretty form, and moderate in size, was recommended an Award of Merit. A curiously-tinted Rose, named M. Ada Carmody, was pink, with a shade of straw colour on the inner side of the petals. Waltham Standard was shown, and the lovely new Rose, Marquise de Litta, Enchautee (Tea), Empress Alexandra of Russia, Milton (a crimson H.P.), White Lacy, and Zephyr (Tea), were some others.

Messrs. F. CANT & CO., Braiswick Nursery, Colchester, made a display with Rose blooms, some of the varieties being shown in admirable specimens. Such were The Bride, Madame de Watteville, Madame Rady, Madame Lombard, Ethel Brownlow, Mrs. Frank Cant, A. K. Williams, and others. Bunches of garden Roses were very showy (Silver Flora Medal).

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, had a pretty display of varieties of Lilies, and of Calochortus. A beautiful yellow variety named aurea, of the species *C. plumera*, was recommended an Award of Merit. It has a dull brown jagged ring across the centre petals (Silver Flora Medal).

Flowers of several varieties of hardy Nymphaeas were shown by Mr. J. HUDSON, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton. To one of these, named *N. marliacea alba*, a First-class Certificate was awarded; and an Award of Merit to *N. Ellisiana* (new), a crimson-flowered variety.

Lobelia tenulor grandiflora, shown by Mr. B. LADHAMS, was recommended an Award of Merit. It is a pretty, very free-flowering plant, slender in growth, with larger blue flowers than the type, and about 1½ foot high.

Sir T. LAWRENCE, Bart., Bursford, Dorking (gr., Mr. W. Bain), exhibited flowering racemes of *Salvia bicolor*. This hardy biennial species grows about 4 feet high, and produce many flowers upon each plant. The upper lip may be described as heliotrope-purple, the lower one nearly white. Mr. Bain informs us that the bees are very fond of it, and are apt to disfigure the blooms (Award of Merit).

Aristolochia brasiliensis, a flower of which was shown by A. KINGSMITH, Esq., Harrow Weald, was awarded a Botanical Certificate. The perianth in this species is much curved, and the lobe rather spreading, but the flower is not so pretty or even remarkable as others of the genus.

Carnation flowers in elegant bunches were shown by Mr. J. DOUGLAS, Edenside Nurseries, Bookham, Surrey. Many of the best and newer varieties raised by Mr. MARTIN E. SMITH, and Mr. DOUGLAS were shown. Awards of Merit were recommended to *Polegia* (Douglas), a most bizarre-looking flower of silvery-slate colour marked with very bright rose, Badmington yellow ground edged rose, of fine form; Sir H. Irving, a very dark crimson self; and Miss Violet Douglas, yellow ground, deeply and distinctly edged rose.

Mr. THOS. S. WARE, Hale Farm Nurseries, near Tottenham, exhibited a large collection of hardy flowers in small bunches of a great variety of species (Silver Banksian Medal). Another excellent collection was from Mr. JNO. CHARTON, Tunbridge Wells (Silver Banksian Medal).

A third from Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea. And another from Mr. B. LADHAMS of the Shirley Nurseries, Southampton (Silver Flora Medal). The collection from Messrs. VEITCH & SONS was a very large one, and the species shown were represented by capital specimens. They had also a very pretty lot of Carnation blooms, and some magnificent flowers of varieties of *Iris Kämpferi* (Silver-gilt Banksian Medal).

Messrs. BARR & SONS, King Street, Covent Garden, London, exhibited, as usual, flowers of a great number of bulbous and hardy plants now in season (Silver Banksian Medal).

A First-class Certificate was awarded to a most ornamental Plant, shown by Mr. JNO. RUSSELL, nurseryman, Richmond, Surrey. It bears the much lengthened name of *Platanus occidentalis argentea variegata*, and many of the leaves are pure white, the young stems being nearly so. A freely-variegated and desirable variety.

HARDY FLOWERS IN COMPETITION.

Mr. C. HERRIN, gr. at Dropmore, Maidenhead, was 1st for twelve bunches of hardy flowers, and showed *Helianthus multiflorus* (double), an inflorescence of *Yucca gloriosa*, *Aconitum bicolor*, *Spiraea arifolia* (magnificent sprays), *Galega officinalis*, *Lilium candidum*, *Lathyrus grandiflorus*, *Lysimachia thyrsiflora*, Rose Crimson Rambler, *Aletrisera aurea*, *Achillea Ptarmica* fl. pl., The Pearl, and a seedling variety of Delphinium.

The 1st prize collection of eight bunches of hardy flowers was hardly so bold and good. It was shown by Miss DEBENHAM, St. Peters, St. Albans.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), S. Courtauld, De B. Crawshaw, H. M. Pollett, E. Hill, W. H. Young, H. J. Chapman, J. Douglas, A. H. Smee, F. Mason, E. Ashworth, and W. Cobb.

Compared with the fine displays made by the Orchids at previous meetings, there was a very small number of exhibits on the present occasion. Messrs. J. VEITCH & SONS, Ltd., Royal Exotic Nurseries, King's Road, Chelsea, staged a small group, in which were three plants of the new *Laelio-Cattleya* × *Canhamiana alba* (*L. purpurata* × *C. Mossii*). The large flowers had white sepals and petals, suffused with a very slight pearly-pink tint, the delicate hue of which contrasted most effectively with the dark crimson-purple of the ample labellum (Award of Merit). Messrs. Veitch also

showed *Laelio-Cattleya* × *Eunomia* (L. *pumila* × C. *Gaskelliana*), with flowers resembling those of *Laelia prestantia*, but larger; L. C. × *sephyra* (L. *xanthina* × C. *Mendellii*), with pretty yellow-tinted flowers; and two plants of the handsome *Diaa* × *Veitchii*.

Messrs. F. SANDER & Co., St. Albans, showed *Phaius* × *Ashworthianus* (Maunl × *maculatus*), with sepals and petals yellow, slightly tinged with green; lip yellow, with distinct brown markings on the anterior portion (Award of Merit); *Cypripedium* × *Svend Bruun* (Lowi × *Curtisii*), C. × *mulus* (*hirsutissimum* × *Lawrenceanum*), C. × *orphanum*, and C. × *Euryale*.

Frau IDA BRANDT, Brunnenhof, Klesbach, Zurich (gr., Mr. Schlecht), sent a cut spike of the fine old *Epidendrum nemorale* major, with showy, rose-coloured flowers borne on stiff, warty peduncles. Although first imported from Mexico over half a century ago, it is by no means a common plant, and the inflorescence represented a fine form of it (Award of Merit). Mrs. BRANDT also sent spikes of a fine form of *Oncotium* *Wilkinsonianum*, *O. nebulosum* *parviflorum*, *Epidendrum Brassavola*, *E. radiatum*, *Phaius Humboldtii*, *Cattleya Warscewiczii*, *Phalaenopsis violacea*, and the blue *Utricularia Andreana*, which, although not an Orchid, like many of its congeners, is usually associated with them in gardens.

ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow, Cheshire (gr., Mr. Holbrook), showed his beautiful white *Cattleya superba* alba, the white C. *Eldorado* Wallisii, several fine forms of C. *Warscewiczii*, one of them resembling C. *Dowiana aurea* much in form, odour, and general appearance, although in colour it was a light form of C. *Warscewiczii*. Mr. Ashworth also showed cut examples of *Laelio-Cattleya* × *Mardellii* C. *Luddemanniana* × L. C. × *elegans* (gr.), raised by Messrs. Veitch & Son, first flowered by them in 1879, and still a very rare and pretty hybrid, with light rose-coloured flowers, having a broadly-expanded dark rose front lobe to the lip; and a flower of the new *Dendrobium Victoria Regina*, which, if only a botanical plant, is decidedly of the blue tint represented by the collector, and, when established, will be pretty enough.

Fruit and Vegetable Committee.

Present: T. Francis Rivers in the chair; and Messrs. Geo. Bunyard, P. C. M. Veitch, Jos. Cheal, A. H. Pearson, Alex. Dean, G. H. Sage, Geo. Wythes, C. Herrin, and H. Balderson.

A first class collection of vegetables, shown by Mr. E. Beckett, gr. to Lord ALDENHAM, Aldenham House, Elstree, was awarded a Gold Medal. The heaps of vegetables (for they were not dishes) were really capital—clean, even, of the very best quality; and, excepting a few Mushrooms, we may say that not one of the vegetables was weak. There were upwards of thirty of these heaps, and of course most of them were of distinct varieties. It is hardly necessary to repeat them here, for the interest in the exhibit was due to the successful cultivation they had received rather than to the varieties themselves.

Several seedling Melons were shown, and one of these, named *Syon Perfection*, shown by Mr. Geo. WYTHES, Syon House Gardens, was recommended an Award of Merit. It is of medium size, much-netted greenish-yellow exterior. Flesh scarlet; flavour full, and very juicy. The awards to new Melons have so far been few this season.

An Award of Merit was also recommended to the "Logan Berry," or Strawberry-Raspberry, sprays of which were shown by Messrs. Geo. BUNYARD & Co., Maldstone. It is from America, grows about 2 feet high, and the fruits are long, rather thin, and acid. Seedling Peas were shown by Messrs. R. VEITCH & Son, Exeter, and Mr. ECKFORD, but no awards were made.

Messrs. W. W. JOHNSON & Sons were awarded a Silver Bankian Medal for a collection of Peas embracing about fifty varieties; and Messrs. CARTER & Co., High Holborn, obtained a similar Medal for a collection of Lettuces and Turnips.

Mr. W. Allan, gr. to Lord SUFFIELD, Gunton Park, Norwich, sent some excellent fruits of a dark coloured Strawberry, Lady Suffield.

Cherries were exhibited in most tempting appearance by Messrs. T. F. RIVERS & Son, Sawbridgeworth. These were presumably the result of orchard-house culture, and all of the score or so of varieties were very fine. We may instance Early Rivers and Monstreuse de Mersel (Silver-gilt Knightian Medal). The flavour, however, was defective.

Gooseberries in pots were shown by Messrs. Jas. VITCH & Sons, Chelsea, who had about forty plants, which had been potted up last autumn. These plants illustrated the methods of training Gooseberry bushes, viz., the horizontal, cup-shaped, pyramidal, and standard. The stands da were about 4 feet high, and are grafted on *Ribes aurea*. Fruits of the new and highly-flavoured Strawberry, Veitch's Perfection, were also shown (Silver-gilt Knightian Medal).

The Lecture.

In the afternoon the Rev. GEO. HENSLOW delivered a lecture on the "Mutual Accommodation between Plant-organs."

After a few remarks upon the accepted theory of evolution, being equally true in regard to the race as it is in the case of the individual, reference was made to protoplasm, and its capabilities and character were briefly stated. Protoplasm can make all kinds of organs in plants, and although commonly it does so regularly, and according to certain rules, it nevertheless possesses the power to respond to changes in the plant's environment, and to make quite

different organs than regular ones, according to requirement. Next it was explained how the organs of a plant are for convenience sake classed into groups, viz., the axile organs, and the appendages. Any part of the stem or root belonged to the first-named class, but the leaves, flowers, &c., to the appendages. The terms "analogous" and "homologous," as applied to plant organs, were then described, the former term expressing a case of superficial resemblance where two organs of different nature are used for a similar purpose, and the second where the two organs are alike in character and origin. Turning to speak of the organs individually, the Professor pointed out that roots were fundamentally the same as stems, but altered to suit the plant's requirements.

Several illustrations were next given of instances where the living protoplasm had enabled the root to change in character according to changed conditions. The Carrot had become a large-rooted biennial from a slender-rooted annual. The ease in which roots under certain conditions will produce stems, and vice versa, are matters well known to our readers, and they were illustrated by examples submitted by Professor Henslow.

In speaking of stems, the lecturer showed how capable they were of doing the same work that roots do, and of making roots. Every gardener who has rooted a cutting has observed an instance of the protoplasm in a stem making a root. Though the tubers of a Potato under natural conditions are produced under ground, if these are continually removed as they are formed, the plants will make a number of tubers in the axils of the stem above the ground. The methods by which plants are enabled to climb was next alluded to, and the well-known circumstance that most of the organs are utilised in one case or another for the purpose fully illustrated. In cases like the Hop or Convolvulus, the stem itself is sensitive, and winds round and round an object of resistance, but in other instances it may be the petiole of the leaf, or part of the inflorescence or tendril that is delegated by Nature to assist the plant to climb.

Many illustrations from specimens were given, including one in which a root had climbed several times around an object. In speaking of leaves subsequently, Mr. Henslow showed how occasionally stems discharged all the functions of leaves, such as transpiration, &c., and instanced the *Stapellias*. The stipules served all manner of purposes in different species, according to the requirements of the plant. Follicleous in the Pea, they form formidable horns in some of the *Acacias*.

Bud scales were remarked upon, and their different origin in diverse species pointed out. The inflorescence and reproductive organs showed the same principles of adaptation to necessary conditions. Bracts were generally arrested leaf-stalks, but not always. Colour was usually centred in the corolla, but numerous instances were illustrated where this is not so, when indeed the colour is independent of the flower, typical specimens being the *Poinsettia* and *Cornus*. The latter also mimicked a flower, and were often mistaken for white petals. All these bracts are homologous, with leaves. The change of stamens into petals, and the production of petals in the place of ovules, was illustrated.

The numerous illustrations and dried specimens submitted by the lecturer added much to the interest of the subject. The facts were these, that though many plants climb, they do so by very different means. Most plants have colour wherewith to attract insect agents of fertilisation; but for this and most other purposes one organ is used by one plant, and a different one by an opposite species. Thus throughout plant-organs is seen this "mutual accommodation."

TUNBRIDGE WELLS.

JULY 7.—The thirty-ninth meeting of the above Horticultural Society was a success, as usual, but we noted a great falling off in fruit.

For four stove and greenhouse plants, Mr. N. Turner, gr. to J. A. LE LACHEUR, Esq., The Wilderness, Tunbridge Wells, was well in front of Mr. J. Mason, gr. to H. J. WOOD, Esq., Tunbridge Wells. Mr. L. Pope, gr. to J. J. BARROW, Esq., Holmwood, won for ornamental foliage-plants, and also for six stove and greenhouse plants in bloom, and for four ditto, but was beaten by Mr. J. Mason for six ornamental foliage-plants in the local classes. Mr. L. DUPOND was 1st for six single, and Mr. C. DUNK for six double-flowered Begonias. Some really grand *Caladiums* came from Mr. N. Turner, gr. to J. A. LE LACHEUR, Esq.

Groups were good, the 1st and 2nd going to Mr. J. Howes, gr. to W. COBB, Esq., Dulcote, and Mr. J. MASON.

Orchids were excellent, especially the well-flowered pieces of *Epidendrum vitellinum* major, *Laelia tenebrosa*, *Cattleya Mendellii*, *Miltonia vexillaria leucoglossa*, and *Cypripedium bellatulum*, from Mr. J. Howes.

Roses were fairly good, and numerous. Messrs. F. CANT & Co., Colchester, and Mr. G. MOUNT, Canterbury, were 1st and 2nd in the classes for forty-eight varieties, and for twelve Teas or Noisettes.

Mr. Salter, gr. to T. B. HAYWOOD, Esq., Reigate, and Mr. Harris, gr. to E. M. BETHUNE, Esq., Horsham, were the most successful among amateurs. Mr. G. Elwes, gr. to Major F. LUTWIDGE, was the chief winner in the local classes.

Mr. G. Elwes secured the National Rose Society's Bronze Medal for *Alfred Colomb*; and Mr. G. MOUNT a similar award for *Duchesse de Morny*.

Fruit.—The best three bunches of Black Hamburg Grapes came from Mr. C. EARL, gr. to O. E. d'AVIGNON Goldewid, Esq., Tonbridge; the best three bunches of any

other black Grape being *Gros Maroc* from Mr. LAKER, who also won for three bunches of *Muscat of Alexandria*.

Mr. C. EARL was a long way ahead for a collection of nine varieties, and staged a really good lot.

There were some excellent non-competitive exhibits; especially so being a grand lot of herbaceous cut flowers from Mr. CHARLTON, Tunbridge Wells.

IPSWICH AND EAST OF ENGLAND HORTICULTURAL.

JULY 7.—A timely change in the direction of this Society has given a new lease of life to one of the oldest and best-known horticultural institutions in the eastern counties. A Society that existed so n after the Queen ascended the throne should claim support by its long record of operations; and the infusion of new blood to the committee is working in a highly satisfactory manner. The exhibition, held on this occasion in the delightful grounds of the Upper Arboretum, was undoubtedly the best ever held by the Society. Three large marquees were required; some of the exhibits, especially among the cut flowers, were of a high order of merit.

In a part of the country where the Rose is so largely cultivated, it was only natural it should be a prominent feature at Ipswich. The best collection of thirty-six varieties came from Mr. B. B. CANT, Colchester, who staged some high-class flowers, the most prominent being *Duchesse de Morny*, *Marchioness of Londonderry*, *Star of Waltham*, *Suzanne-Marie Rodocanachi*, and Mrs. John Laing. Mr. B. B. Cant was also 1st for twelve varieties, three of each, having *Baroness Rothschild*, Mrs. John Laing, *Her Majesty*, &c., in fine character; Messrs. D. PRIOR & Son were 2nd in each case.

Messrs. PRIOR & Son were 1st with twelve Teas and Noisettes, Mr. B. B. CANT being a very close 2nd.

The best six H.P. Roses of any one variety were Mrs. John Laing, from Messrs. D. PRIOR & Son. Messrs. PRIOR & Son also had the best six Teas, staging *Maman Cochet* in fine character.

Garden Roses, shown in bunches of six varieties, were a charming feature. Mr. A. C. GREEN was 1st with delightful bunches; Mr. A. Andrews, gr. to the Hon. W. LOWTHER, was a good 2nd; a fine bunch of *Crimson Rambler* was in this stand.

In the amateurs division, the Rev. A. FOSTER-MELLIAR was 1st with twenty-four varieties, and the Rev. H. A. BERNERS, 2nd; and with twelve varieties, the Rev. A. C. JOHNSON, Capel St. Mary, was 1st, and D. C. WARNER, Esq., Eye, 2nd; with twelve Teas, the Rev. A. FOSTER-MELLIAR was 1st, and the Rev. H. A. BERNERS, 2nd. The best six Roses of any H.P., were *La France*, from the Rev. A. FOSTER-MELLIAR; with twelve Teas, the Rev. H. A. BERNERS was 1st with *Maman Cochet*.

A very fine display of hardy herbaceous flowers were made. One leading class was for a collection most tastefully arranged on a table 8 feet by 3 feet, and here Messrs. WALLACE & Co., Colchester, were placed 1st with a unique display, having various interesting species of *Lilies* at the back, against *Palms*, and in the foreground *Calceolarii* in variety; between these were such things as *Alstroemeria*, *Hemerocallis aurea major*, very fine, and other novelties; Mr. C. JACOB, Ipswich, was 2nd, also with a remarkably good collection.

With twenty-four bunches, Mr. GEO. GILBERT, nurseryman, Ipswich, was 1st, having very fine and imposing bunches.

Sweet Peas in bunches were an excellent feature; Mr. J. GILBERT was 1st with a charming assortment, well set up.

Mr. G. GILBERT was the only exhibitor of four foliaged plants, and was 1st for a group of plants arranged for effect. The best group of Begonias arranged with foliaged plants came from Mr. S. W. SWEET, a working man of Ipswich, beating the local nurserymen. There was also a class for groups of *Gloxinias* similarly arranged. Mr. SWEET also had a 1st prize for twelve tuberous-rooted Begonias, admirably grown and bloomed. The best four Exotic Ferns came from Mr. GILBERT; and Mr. MESSENGER, The Gardens, Woolverstone Park, had the best six table-plants.

FRUITS.

Mr. MESSENGER won 1st prize for six dishes of fruits; he had good Black Hamburg and Buckland Sweetwater Grapes, Pineapple Nectarine, Bellegarde Peach, Brown Turkey Figs, and Freston Tower Melon.

Mr. W. Howbett, gr. to Dr. CABLEY, had the best three bunches of Black Hamburg Grapes, well-coloured; Mr. ANDREWS was 1st with two bunches of white Grapes, having well-coloured Buckland Sweetwater.

The best dish of Peaches was *Bellegarde*, from Mr. MESSENGER; and his was also the best dish of Nectarines, having good Pine-apple. Black Cherries were represented by *Tartarica*; white, by *Bigarreau Napoleon*. The best dish of Strawberries for weight was *Latest-of-All*, from Mr. MESSENGER; the best for flavour, British Queen. Mr. H. ROSE had the best collection of six dishes, staging *Royal Sovereign*, *Latest-of-All*, *Loxford Hall Seedling*, *Carolina Superba*, *Sir J. Paxton*, and A. F. BARRON. Raspberries, red, white, and black Currants, Gooseberries, &c., were plentifully shown.

Special prizes for vegetables offered by Messrs. SUTTON & Sons, WESS & Sons, DANIELS Bros., F. SMITH & Co., and W. ADDISON brought a very good display indeed; in other classes they were seen to good advantage.

WIMBLEDON HORTICULTURAL.

JULY 7.—The twenty-fifth annual exhibition of this Society, held in the grounds of Draxmont House (T. E. Crocker, Esq.), on the above date, was a success financially and horticulturally.

To refer briefly to two of the leading classes:—Group of miscellaneous foliage and flowering plants, quality and effect combined (open class). Here 1st honours were gained for a pleasing group set up by Mr. W. Thornton, gr. to T. E. Crocker, Esq., Draxmont; a good 2nd being Mr. J. Low, gr. to Rosser Dean, Esq., The Priory.

Interest attached to the class in which prizes were offered for a miscellaneous group, confined to single-handed gardeners residing in the district, the awards going for meritorious contributions to Messrs. T. CHANDLER and F. KILBON.

HANLEY HORTICULTURAL FÊTE.

JULY 7, 8.—The first horticultural show held in the New Park, Hanley, took place on the above dates. The Park itself is well adapted for a large show, and under the able secretaryship of Mr. J. Kent, the Park Superintendent, and Mr. J. B. Barrow, assistant town clerk, a very satisfactory exhibition was brought together. The attempt to establish a large annual horticultural exhibition in the Staffordshire Potteries deserves success. The prizes were sufficiently encouraging to bring exhibitors from widely different parts of the country. The groups were five in number, and were arranged in first-class style. The fruit, too, was an excellent feature, and attracted a great deal of attention. Unfortunately some of the dishes of fruit were removed immediately after the judging, and other dishes substituted; thus the judges' awards were severely criticised by the public. The committee should prevent a repetition of this practice, and whatever the interest at stake may be, all exhibits for competition should remain, as staged, until the close of the show. The following are some of the principal awards:—

Group of Plants arranged for Effect.—1st, Messrs. JENKINSON & SON, Newcastle, Staffordshire, whose group was tastefully arranged, and contained a number of well-flowered Orchids, and such plants as Bamboos, Caladiums, Crotons, and Ferns. The excellence of this group was such that it won from Mr. J. CYPHER, Cheltenham, who was 2nd.

The best group of Orchids arranged for effect was from W. THOMPSON, Esq., Walton Grange, Stone (gr., Mr. W. Stevens). This was a superb collection, and contained some very fine specimens. Mr. J. CYPHER was again 2nd.

Specimen Plants.—C. H. WRIGHT, Esq., Halston Hall, Oswestry, was 1st for six Exotic Ferns, showing fine specimens of *Adiantum Williamsii*, *A. concinnum*, and *Davallia filix-foemina*.

For six plants in flower and six fine-foliage plants, Mr. J. CYPHER was 1st, with excellent specimens. Mr. CYPHER was likewise 1st for eight Exotic Orchids, and six Palms, distinct.

The best twelve Caladiums were from J. F. MADDOCK, Esq., Alsager (gr., Mr. Smith).

Roses.—The best collection of forty-eight distinct varieties was from Messrs. ALF. DICKSON & SONS, Newtownards, Ireland, whose stand contained several new varieties of their own raising. Amongst the best were *Souvenir d'Elise*, *Altes Grahame*, *Innocente Pirola*, *Souvenir de S. A. Prince*, *Marie Van Houtte*, new Seedling (Lady), *W. Beattie Brown*, *Helen Keller*, and new Seedling (*Daison Maroon*). 2nd, Messrs. HARKNESS & SON, Bedale, Yorks, whose stand had fine blooms of *Prince Arthur*, *Fisher Holmes*, and *Horace Vernet*. Thirty-six distinct varieties, three blooms of each, were best from Messrs. HARKNESS & SONS, whose stands had fine trebles of well-known varieties.

Messrs. TOWNSEND & SON were 1st for twenty-four distinct varieties, and Messrs. DICKSON & SON, Ireland, for twelve blooms, distinct varieties. For twelve distinct Teas in trebles, Messrs. TOWNSEND & SON competed with most success.

The most decorative arrangement of Roses was made by Messrs. JENKINSON & SON, Newcastle; and the same firm had the best display of floral arrangements.

Fruit.—For a collection of nine dishes of fruit, the Earl of HARRINGTON (gr., Mr. Goodacre), and Lord BAGOT (gr., Mr. Bannerman), were equal 1sts. Mr. GOODACRE's collection contained a Pine, Foster's Seedling, and Black Hamburg Grapes, Royal George Peaches, Lord Napier Nectarine, Reine Hortense Cherries, Brown Turkey Figs, Royal Sovereign Strawberries, and Hero of Louisa Melon. Mr. BANNERMAN staged Black Hamburg and Foster's Seedling Grapes, President Strawberries, Brown Turkey Figs, two Melons, Downton and Lord Napier Nectarines, and Royal George Peaches. The Grape classes were fairly well contested.

Six Peaches were best from G. MEAKIN, Esq., Crosswell Hall, Stafford (gr., Mr. Wilks); and the Duke of SUTHERLAND, Trentham (gr., Mr. P. Blair), was 2nd.

For an equal number of Nectarines, the Earl of CARNARVON, Brethly Park (gr., Mr. J. Rad), was 1st; and the Duke of SUTHERLAND 2nd.

Other classes were for Melons, Cherries, Strawberries, Gooseberries, and Tomatoes.

Vegetables.—A collection of nine distinct kinds of vegetables was best from Lady THEODORA GUEST, Inwood House, Blandford (gr., Mr. Wilkins), who staged fine samples of

Onion Record, French Bean Canadian Wonder, Cauliflower Magnum Bonum, Cucumber Prolific, Potato Ringleader, Pea Duke of Albany, Carrot Model, Tomato Perfection, and Green Globe Artichoke. The Earl of CARNARVON was a good 2nd.

There were numerous classes for residents in the pottery towns, and for gardeners and amateurs resident within 25 miles of Hanley Town Hall.

Non-competitive Exhibits.—These contributed largely to the display of cut flowers and small decorative plants. Mr. H. ECKFORD, Wem, staged fifty varieties of Sweet Peas.

Messrs. DICKSON, Chester, showed a fine collection of 150 bunches of herbaceous cut flowers, for which a Gold Medal was awarded.

Messrs. COWAN & SON, The Vineyard, Garston, Liverpool, staged a fine collection of Tea Roses in pots, numbering sixty varieties, also a fine arrangement of tuberous Begonias, Orchids, Ferns, and Caladiums, the grouping of which was most effective.

Messrs. CLIBBAM & SON, Altrincham, sent a collection of herbaceous plants, also a collection of stove and greenhouse plants for table decoration.

Messrs. WEBB & SONS, Stourbridge, sent a collection of cut flowers.

Messrs. W. & J. BIRKENHEAD, Sale, Manchester, exhibited a stand of Ferns, containing a great number of varieties, the whole occupying the entire end of one tent, and proving a source of considerable interest. A Gold Medal was awarded for this exhibit.

DURHAM, NORTHUMBERLAND, AND NEWCASTLE BOTANICAL AND HORTICULTURAL.

JULY 8, 9, 10.—This old-established and well-managed northern Society held its annual exhibition on the above dates at Newcastle. Fine weather only was needed to make it a success. Scarcely so extensive as on some previous occasions, perhaps, the show was one of exceptional excellence. Notably was this the case in regard to fruits, Roses, hardy herbaceous flowers, floral decorations, Panicles, and Violas. There were several good exhibits of plants, but there were fewer good flowering plants than usual.

PLANTS.

The only exhibits of stove and greenhouse flowering plants were from Mr. Nicholas, gr. to the Marquis of Zetland, Upleatham, Marsh-by-the-Sea; these were, however, excellent examples of specimen plant culture, and well deserved the two 1st prizes awarded for six and for four varieties in two respective classes. These consisted of two big specimens of *Anthurium Scherzerianum*, one a specially fine form with grand spathe; two *Dipladenias* in good condition, well flowered, and with healthy foliage; two *Ixoras*, viz., *I. Moorei*, and *I. Williamsii*, were both alike capital plants. Other good plants were *Aphelaxis macrantha* roses (now rarely seen), very fresh and bright; *Erica ventricosa* Bothwelliana, a fine late pale coloured form of this section, and *Statice profusa*, very well coloured.

The foliage plants consisted chiefly of Palms, prominent amongst which were the *Kentias*, *Cycads*, and *Crotons*. For six varieties Mr. McIntyre, gr. to Mrs. Pease, Darlington, beat Mr. Nicholas, having larger plants, the best in the winning six were *Croton angustifolius*, a fine plant, and *C. Baronne Jaa de Rothschild*, a splendidly coloured example, with fine *Kentia* *Belmoreana* and *Cycas circinalis*.

In the class for four plants Mr. Nicholas had a splendidly coloured *Croton* *Warreni*, with other good examples.

Mr. McIntyre had the three best *Crotons*, medium-sized plants, and the best trio of *Dracenas*, well coloured useful examples. For table plants Mr. McIntyre was easily 1st, showing a well furnished, clean, and bright half dozen.

Groups, &c.—In these there is room for improvement, the exhibitors not appearing to have well considered what they were going to accomplish beforehand. Mr. McIntyre had the best group, informal in design, well broken up, with rather too many foliage plants in proportion to the flowering ones; and too much virgin cork was also apparent. Mr. F. EDMONDSON, Green Market, Newcastle, was 2nd, but the beautiful effect which he had produced in the foreground was entirely marred by the staging at the back. For arrangement of plants for fireplace decoration, Mr. J. LAWLESS, gr. to J. LIDDELL, Esq., Frudhoe-on-Tyne, was placed 1st, a close competition, the base and the mantelpiece being alike good.

CUT FLOWERS.

Roses.—Outside the National Rose Society's Exhibition at the Crystal Palace, it is not often that finer displays are made than at Newcastle. The northern Roses are characterised by freshness and brightness. On this occasion a special class for a "collection of Roses, arranged for effect in a space 10 feet by 4 feet, with Palms and other foliage plants," brought out three good exhibits. When we state that Messrs. PERKINS & SONS, of Leamington, were placed 1st, a sufficient guarantee is given that the display was a good one. This exhibit exemplified what can be done with the Rose in bouquets (of which there were several, quite distinct), in baskets (tastefully arranged), and in boxes of specimen blooms, &c., all being well displayed. Messrs. HARKNESS & SONS, Bedale, were 2nd.

In the usual Rose classes, Messrs. HARKNESS & SONS were to the front with grand blooms, bright, clean, fresh, and of full size; and, above all, well set up. This firm was first for seventy-two singles, in thirty-six varieties; for forty-eight

disimilar, for thirty-six ditto, and for twenty-four ditto in triplets, thus carrying off all the chief prizes. The finest blooms in these exhibits were Her Majesty, Dupuy Jamain, Marchioness of Londonderry, Horace Vernet, La France, Fisher Holmes, Reynolds Hole, Mrs. J. Leing, Captain Mogul (extra fine), Jean Liabaud, Star of Waltham, Grand Hayward, Victor Hugo, Marie Van Houtte, John Stuart Mill, Gustave Figeau, Rowland Hill, Mdlle. Marie Rady, Countess of Oxford, Marie Verdier, Marie Baumann, Marquise de Litta, Ernest Metz, Mary Dickson, and Prince Arthur, northern Rose growers will do well to note these kinds.

Messrs. MACK & SON, Catterick, showed in one or more of these classes, staging smaller, but bright and fresh, blooms. In the class for twelve blooms of one variety, Messrs. R. MACK & SON were 1st with splendid blooms of *Madame Caroline Testout*; and Messrs. HARKNESS & SON followed with the same variety.

The amateur rosarians of the north showed well, as at previous exhibitions; Mr. R. PARK was 1st for twelve triplets, fine well-developed flowers; and Mr. FINLAY, East Layton Hall, 2nd; Mr. PARK winning again with twelve singles.

Hardy Herbaceous Flowers.—Of these there was a grand display, the bunches in most instances being of unusual size, and in very fresh condition. Messrs. J. COCKER & SON, Aberdeen, were 1st for eighteen varieties showing typical border flowers; the finest bunches were those of *Inula glandulosa* (extra fine), *Campanula glomerata*, *Scabiosa caucasica*, *Dictamnus Fraxinella* var. *alba*, *Heuchera sanguinea*, *Iris* (Spanish) *Belle Chinoise*, and *Spiraea macrophylla*.

For twelve varieties, Mr. CAMPBELL of High Blantyre was 1st. *Lilium Harriell* was very good, and *Inula glandulosa* fine.

Panicles and Violas.—Not only was the competition keen, but the several stands were of the highest order of merit. Mr. CAMPBELL had the best forty-eight fancy Panicles, the blooms quite fresh, and of extra size; Mr. ALF. LISTER, Rothsay, being 2nd. Mr. LISTER was 1st, however, for twenty-four show Panicles, the colours being bright, and the selection good.

Mr. CAMPBELL had the best of the competition in the class for Violas in not fewer than fifteen varieties. In Mr. CAMPBELL's stand the best were *Duchess of York*, *Iona*, *Lizzie Paul*, *Lord Salisbury*, and *Dorothy*.

In the Second Division, Mr. DAVISON, Dalton, was 1st for twenty-four fancy varieties; and Mr. PROUDLOCK for twelve, both staging well.

Carnations.—These consisted chiefly of flowers from under glass or from plants in pots. Messrs. LAING & MATHER, of Kelso, were 1st for twelve bunches of not fewer than six blooms in each bunch, to be set up in specimen glasses, thus arranged making a good display; the best were of the *Malmesdon* section (pink and bluish), with other standard kinds, as *Uriah Pike*, *Germania*, &c.

Decorative arrangements of Flowers.—As usual, this department was well sustained, the taste displayed being good, and the method of arrangement by the Committee all that one could desire in order for the exhibits to be seen to advantage.

Messrs. PERKINS & SON were 1st for Bouquets, in all the four classes, showing in their usual good style.

Mr. T. BATTENSBY beat Messrs. PERKINS & SON for a lady's spray, with a charming combination of miniature *Rosebuds* and light foliage, without any Orchids, upon which Messrs. PERKINS & SON relied, but with less success.

Messrs. PERKINS & SON were again to the front with baskets of flowers, in two classes.

FRUIT.

In the larger class, for eight dishes, Mr. McIndoe, gr. to Sir JOSEPH PEASE, Hutton Hall, was a good 1st, showing what is most essential, well-ripened fruit. His best dishes were those of Black Hamburg and Muscat Grapes, Darwin Nectarines, Negro Largo Figs, Beacon Pears, and Bellegrape Peaches. Mr. TULLETT, gr. to Lord BARKARD, Raby Castle, was a good 2nd, his best dishes being very fine Black Hamburg Grapes, Dr. Hogg Peaches, and Lord Napier Nectarines.

For four dishes, Mr. McIndoe was also 1st, with similarly good dishes, Stanwick Elrige Nectarines being notable.

Mr. TULLETT had the best exhibit in the class for four bunches Grapes in not fewer than two varieties, showing very fine Black Hamburgs and good Madrasfield Court.

Mr. McIndoe had the best Muscats in the class for that Grape, and also for any other white with Duke of Buccleuch.

Mr. Luke Thompson, gr. to A. GUTHRIE, Esq., Low Fell, had a fine exhibit in the class for Black Hamburg Grapes, Mr. McIndoe being 2nd; both exhibits, however, were a little deficient in colour.

For Peaches, Mr. Lonsdale, gr. to R. H. APPLETON, Esq., Woodside Hall, was 1st, with well-coloured and ripened Royal George, Mr. NICHOLAS being 2nd with the same kind.

For Nectarines, Mr. TULLETT was 1st with Lord Napier and Mr. McIndoe 2nd with Darwin. //

MANCHESTER ROYAL BOTANIC.

JULY 10.—This was the best exhibition of Roses that has been held for years under the auspices of the Royal Botanic Society. Not only were the premier classes of both nurserymen and amateurs more numerously filled, but the blooms were of superior quality. The North of Scotland and Ireland were not represented so well as usually, but the Midlands and the south came out strong both in numbers and quality.

In regard to effective exhibition, Messrs. PAUL & SON, with a wealth of bloom not staged for competition, caught all eyes. The groups placed together in hampers were splendid, but a little marred by the rough outline of the wicker-work, too much like the rough-and-ready business of Covent Garden. These, together with the exhibits of WM. PAUL & SON, made grand centre pieces in the annexe, breaking up the extreme formality of the straight lines of the competition square cases. Then, again, the great variety brought in to make up the class under the heading of "Display of Roses" told well, and kept the visitor chained to the area of the exhibit.

Nurserymen.—Sixty distinct single trusses.—Mr. B. R. CANT, Colchester, 1st, with blooms of extra quality; Messrs. HARKNESS & SON, Hitchin, had 2nd prize. The best blooms in this lot were A. K. Williams, Thomas Mills, Comte Raimband, Pride of Waltham, Duchess of Bedford, Merveille de Lyon, Victor Verdier, Mammon, and Lady Fitzwilliam.

For thirty-six distinct single trusses, Mr. B. R. CANT was again 1st. The following were the best blooms: Ulrich Brunner, Marchioness of Londonderry, Victor Verdier, A. K. Williams, Helen Keller, Her Majesty, Dupuy Jamin, Madame Cusin.

For twenty-four Teas or Noisettes, single trusses, Mr. B. R. CANT was 1st, and included capital blooms of Madame de Watteville, and Bridesmaid. Mr. GEORGE PRINCE, Oxford, was 2nd. Maman Cochet is a splendid flower with good formed screw petals, Innocente Pirola, and Ethel Brownlow.

For twelve Teas or Noisettes, Mr. F. CANT was 1st, the best blooms being The Bride, Madame de Watteville, and Ethel Brownlow; Mr. JOHN MATTOCK, Oxford, 2nd.

For twelve blooms of a Yellow Rose, Mr. PRINCE was 1st; and for twelve light-coloured Roses, Mr. B. R. CANT was 1st with Her Majesty.

For twelve Crimson Roses, Mr. PRINCE was 1st with Reynolds.

Mr. GEORGE PRINCE obtained the Silver Medal for the best Tea or Noisette Rose in the show (open) with Maman Cochet.

Mr. LINDSELL, Hitchin, obtained the principal Medal for the best Rose in the show with a magnificent bloom of Horace Vernet.

Amateurs.—For the best twenty-four single trusses, Mr. E. B. LINDSELL, Hitchin, was 1st, and had flowers fully as fine as in any of the nurserymen stands, winning 1st here easily. His premier bloom, above noticed, of Horace Vernet, being of wondrous size and symmetry. In addition to that he had Duke of Edinburgh, H. Schultzeis, Rodocanachi, Marchioness of Londonderry, Merveille de Lyon, Chas. Lefebvre, Madame de Watteville, and others—a grand, clean, well-developed group, without a bad bloom. Rev. J. H. PEMBERTON, Essex, took 2nd place, having the following blooms good:—Chas. Lefebvre, Her Majesty, Mr. John Laing, Ulrich Brunner, Marchioness of Londonderry, Horace Vernet, and E. Y. Teas.

For twelve distinct trusses, Mr. LINDSELL was again an easy 1st.

For eighteen Teas or Noisette Roses, Rev. W. B. JACKSON, Bedford, took 1st position; Messrs. PEMBERTON and H. V. MACHIN following in order. The best blooms throughout were Madame Hoste, Marie Van Houtte, Catherine Marmet, Ethel Brownlow, The Bride, and Comtesse de Nadailac, one of the loveliest of the section, and invaluable as a show-Rose.

For twelve Teas or Noisettes, Mr. LINDSELL again triumphed; Messrs. PEMBERTON and MACHIN following, Caroline Kuster and Comtesse de Nadailac distancing fellow-blooms. Mr. LINDSELL took 1st position with Alfred Colomb, for a dozen crimson Roses, and also for light-coloured Roses; while the Rev. W. B. JACKSON had the premier award for a dozen yellows.

Messrs. WM. PAUL & SON, Waltham Cross, had a First-class Certificate for a new coloured Tea Rose called "Sylph." It is a mixture of bronze and salmon—good button-hole flower. This firm also obtained a similar award for "Queen Mab," a flower of a rather pleasing apricot colour.

Messrs. PAUL & SONS' non-competitive group was a large and varied one, put up on an octagonal platform. The group contained the following, not named in our report: Marie Baumann, Marchioness of Downshire, Lawrence Allan, Duke of York, and Grandeur of Cheshunt (fine rosy-crimson).

OTHER EXHIBITS.

Messrs. PERKINS, Coventry, had the best assorted lot of bouquets, the small Tea and Noisette Roses telling best among the Asparagus and other greenery.

Misses HOPKINS, Mere Cottage, Knutsford, put up a creditable lot of interesting and varied border flowers, for which they received an Award of Commendation. They also exhibited a seedling Pansy of sturdy habit in a pot, quite double—like a Ranunculus in form, only of Royal Blue colour, with the stamens turned into leaflets dashed with white colour.

Mr. HENRY ECKFORD, Wem, Shropshire, had, in addition to cut Roses, a nice and varied display of Sweet Peas.

It remains for us to say that Mr. P. Weathers, with his Lieutenant, Mr. Chas. Paul, was indefatigable in getting things righted for the popular gaze, and were rewarded with a far more numerous attendance than we have seen unless on our great gala days, the receipts sufficing to pay the prize-money and other expenses.

MALDON (ESSEX) HORTICULTURAL.

JULY 7.—The annual exhibition of plants, cut flowers, fruits, and vegetables, was held on the above date in the grounds of Hill House, the residence of D. C. BIXIE, Esq. The show was a most successful one. Fortunately the tornado which destroyed so much glass, and damaged garden and field crops in the neighbourhood of Chelmsford and other portions of Essex, did not affect the Maldon district.

Mr. H. Saltmarsh, gr. to Miss HART, Malden, was 1st for a group of miscellaneous plants arranged for effect. Double and single-flowered zonal Pelargoniums were shown in good condition by Messrs. SALTSMARSH, THOROGOOD, and PULFORD. Mr. E. Smece, gr. to Miss OXLEY PARKER, Woodham, Mortimer, had the best half-dozen Ferns out of three lots shown, staging fresh even-sized plants. Foliage plants, Begonias, cut flowers, fruits, and vegetables were of satisfactory quality in the various classes.

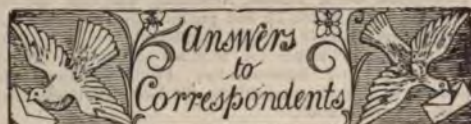


[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					10ths Inch.	Ins.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (−) the Mean for the week ending July 10.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.				
0	3	67	0	+ 23	− 8	7	119	20.6	18
1	3	81	0	+ 22	+ 12	3	168	14.8	38
2	2	19	0	+ 71	− 78	4	100	11.5	36
3	1	115	0	+ 143	− 124	5	98	12.0	42
4	2	107	0	+ 93	− 115	5	96	14.1	42
5	0	126	0	+ 164	− 180	4	90	14.8	51
6	3	83	0	+ 4	− 21	5	117	22.6	29
7	3	99	0	+ 73	− 92	0	112	16.5	37
8	1	115	0	+ 164	− 138	4	111	21.4	43
9	3	88	0	+ 34	− 8	2	126	21.1	29
10	2	102	0	+ 84	− 57	3	117	22.1	32
11	1	123	0	+ 237	− 83	3	122	18.4	49

The districts indicated by number in the first column are the following:—

0, Scotland N. Principal Wheat-producing Districts:—1, Scotland, E.; 2, England, N.E.; 3, England, F.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts:—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; *Channel Islands.



** We are compelled to hold over a report of the Wolverhampton Horticultural Show until our next issue.

BEDS OF RHODODENDRONS, ROSES, &c.: L. S. We fear that having no agreement with the landlord in regard to the removal of the shrubs you have planted during your tenancy, you are required by law to leave them in the beds, if the landlord insists on his rights. If you deal in shrubs, that would alter the matter, all way-going stuff being then removable.

BOOKS: R. E. B. *The Scientific and Profitable Culture of Fruit Trees*, from the French of M. du Breuil (Lockwood & Co., 7, Stationers' Hall Court, London). *Fruit Culture for Amateurs*, by S. T. Wright, published by Upcott Gill, 170, Strand, W.C.

CUCUMBERS CURLING UP, &c.: Cucumber, Kingstown. The symptoms are those of eel-worms at the root, but you should send specimens of fruit, roots, and shoots for examination.

EEL-WORMS: V. D. Before deciding, you should send roots of plants growing in the soil that you suspect contains eel-worms. A soil from which every kind of food necessary to sustain eel-worms is absent is not likely to be the home of the worm.

LOSS OF FRUIT FROM PEACH TREES: C. W. H. The result, probably, of dryness at the root. Examine the soil of the border, and if it be found in a dry state as far as the roots extend, you may be sure that dryness is the true cause. Dryness of the soil is the cause of much ill-success with wall-trees. To it may be laid loss of wood and flower-buds, meagre growth of shoots and fruit, lack of flavour and of juiciness in the fruit, and premature ripening.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. W. Lilium Martagon. —H. K., L. Cummings. Lathyrus sativus, Chickling Vetch. —J. B. 1, Stanhopea insignis; 2, Stanhopea oculata; 3, Phaius grandifolius. —H. W. Echium vulgare. —G. H. Send your Roses to some nurseryman who grows them largely. —S. Klinkhardt. Stapelia capularis. A description of this plant will appear in our next issue. —W. J. C. Jasminum gracillimum and Cyrtopodium Stonei. —C. B. W. Cereus grandiflorus, an old species, and of no great value commercially. —H. A. Pteris adiantoides. —G. C. 1, Gnaphalium margaritaceum; 2, Veronica spicata alba; 3, Pentstemon barbatus; 4, Phalaris arundinacea variegata; 5, Campanula Trachelium album plenum; 6, Arundinaria Simoni aurea. —J. R. The flower was much withered, but it appears to be Gongora scapophorus. Many thanks for your interesting remarks about it. *Constant Reader.* Pyrus torminalis.

PEACHES THAT ALWAYS HAVE SPLIT STONES: Shanklin. The cause of this is not known with certainty, but it is usually attributed to some sort of check to growth, such as would be caused by great dryness of the soil, or excessive disbudbing, or much loss of foliage from the "curl;" in fact, the splitting of the stone in Peaches and Plums is just one of the matters of importance to gardeners which should form a subject for investigation in a research-garden, such as Chiswick might and ought to be.

RENTAL OF FLOREST'S SHOP: Florist. Why not consult a horticultural valuer, say Mr. J. Fraser, South Woodford, Essex; or Messrs. Protheroe & Morris, of Leytonstone, Essex, who would tell you within a trifle what such premises as those you contemplate taking may be worth to rent.

SITUATION IN THE LONDON PUBLIC PARKS: Parks. We should suppose that application made at the proper season (early spring) to the superintendent of any of these parks would suffice, provided it was backed by good testimonials, &c.

STARTING IN BUSINESS AS A GROWER OF MUSHROOMS: Mushroom. We are unable to advise. A capital of £100 is not much wherewith to start such a business, when you consider that you must meet a lot of expenses before getting any returns. There are rent of land and dwelling, cost of living, horse and waggon, stabling, some small amount of labour, baskets for sending Mushrooms to market, cost of stable-dung, spawn, &c.

STRAWBERRY AND "COPY" TRAINS: The number of special trains required just now for the conveyance of Strawberries is noted in the daily papers. We fancy from our own experience, that the gardening papers will soon have to charter a similar train to convey to their writers manuscript, the utilization of which is necessarily limited by considerations of space.

SWEET PEAS: T. P. What you send are Tares. It is not a case of reversion, but of mixed seeds.

COMMUNICATIONS RECEIVED.—WM. R.—W. P. & Sons.—G. M.—W. K.—D. T. F.—M. D.—J. W. (with many thanks).—J. A.—Dr. E. Sarnen.—M. Errera.—Prof. Bailey.—A. D.—C. B.—J. D.—J. C.—W. A. B., Jersey.—J. B.—W. K.—J. W.—J. C. & Co.—J. Carvil.—A. S.—E. C.—W. B.—J. Veitch & Sons.—W. G. Mountford.—T. J. L.—E. B.—N. E. B.—Evening News Reporting Corp.—H. M.—W. W.—D. W.—F. Morley.—J. J. W.—A. P.—W. E.—Expert.—E. C.

PHOTOGRAPHS RECEIVED WITH THANKS.—J. F. McL.

(Market Report, see p. viii.)



THE

Gardeners' Chronicle.

SATURDAY, JULY 24, 1897.

ANDRÉ LENÔTRE.

THE name of Lenôtre is familiar in the mouth as a household word, but very little is known about the man himself, although he had, in addition to the gift of genius for landscape gardening, general talents of no common order. He was born in Paris in 1613, and died there in September, 1700, aged 87. Up to the age of 40, he remained "a youth to fortune and to fame unknown." His father was the chief royal gardener, and co-inspector of the palaces with Mansard, the famous architect, who constructed the dome of the Invalides and the Palace of Versailles. The father of Lenôtre rose to his distinguished position from being an humble gardener, and on his death he was succeeded by his son. The latter had seriously studied the fine arts in his youth, and he was a friend of Le Brun, the painter. Lenôtre was thus a landscape-painter as well as a landscape-gardener. It was Fouquet, one of the farmers of finance, who supplied Lenôtre with the opportunity for exhibiting his talents. Fouquet had just constructed his palace of Vaux-le-Vicomte, which outrivalled every royal residence in France, and that La Fontaine has celebrated in his fables. He commissioned Lenôtre to lay out the grounds and parks in keeping with the castle. He was limited to no sum.

On Louis XIV. visiting the mansion and its splendid surroundings, where gardening was raised to a fine art, His Majesty at once engaged Lenôtre to embellish Versailles. The latter had been a kind of shooting-lodge for Louis XIII. and his courtiers; his son, Louis XIV., retained part of the building, but the façade that has no equal in the world, and the chapel, were the chief new additions. The site was something between a marsh and a swamp. The palace cost, as is now known, 88 millions of francs, and the laying out of the grounds 34 millions of francs. Quite an army of labourers and soldiers was employed to level the ground, transport earth for the terraces, and convert the shaky land into firm soil. The most difficult part of the labour was the reclamation of a swamp that existed at the bottom of the terraces. By a stroke of genius Lenôtre converted it into a canal-lake, or *pièce* of ornamental water, extending into the distance, Triouwards. Then sprang up fountains, porticos, *treillages*, arbours, summer-houses, temples, mazes, &c. The Triouwards or lesser palaces followed, for it was the time when Louis loved flowers and Orange-trees.

Orders quickly arrived for the services of Lenôtre. The Duc d'Orléans, the king's brother, and husband of Princess Henrietta of England, entrusted him with the laying out of the palace-gardens and park of St. Cloud; the Prince de Condé secured his talents for Chantilly; Louis XIV. directed

him to further embellish St. Germain, and the famous terrace there was the result. Many would give the palm to the terrace at Richmond and the sweep of the Thames, with the rich woodland scenery of Buckinghamshire in the distance. Lenôtre created the delightful gardens fronting the lake at Clagny; he laid out Fontainebleau with its *parterre* and Tiber canals. He also planned the palace gardens at Meudon. Sceaux, &c., Greenwich and St. James' parks, and the Imperial gardens at Schoenbrunn, were also designed by the famous French gardener Lenôtre.

When Lenôtre submitted his plans for the gardens, grounds, and parks of Versailles, Louis XIV was wonder-stricken. After examining the first of the collection, he said: "Lenôtre, I present you with 20,000 francs;" he made the same reply after admiring the second and the third drawings. Then Lenôtre closed his portfolio, observing:—"Sire, I can show you no more, as I fear I would ruin you." A short time ago, I passed a delightful half-day in the Musée de Carnavalet examining these same beautiful drawings—real gems of art, as well as many other of Lenôtre's landscape sketches. They are as carefully executed and finished as pictures. But then Lenôtre was a talented painter, since some of his productions adorned the private apartments of Louis XIV.

Of all his creations, the Tuileries Gardens will remain the *chef-d'œuvre* of Lenôtre. Apart from being the place where his father was originally employed, and where he himself first learned the use of the spade, he had the most difficulties to surmount in dealing with the river front, and in the levelling up of the terraces and grounds. Upwards of 200,000 cubic feet of soil had to be employed for these ends. His original plan of the Tuileries Gardens has been much changed: thus, the central alley has been enlarged; more statues placed in the grounds, though not always in harmony with the groups of shrubs; buildings have been erected on the terraces; but the two great groups of Chestnuts that traverse the garden remain as they were planted by Lenôtre.

In 1678 Lenôtre accompanied the Duc d'Orléans and the Duchesse de Nevers to Italy. Louis XIV. desired to afford him opportunities for the widening of his ideas. He admits that he saw plenty of picture galleries and statues, but of landscape gardening nothing, and the best was inferior to what he himself had executed in France. Pope Innocent XI. took a great fancy to Lenôtre, for the latter was witty. He said to His Holiness that he had seen the two greatest personages in the world—"the king my master, and the Pope." "I am but a poor humble mortal beside your king," said Innocent, laughingly. "Not at all, Holy Father," replied Lenôtre, slapping him on the shoulder, and kissing him, "you will bury the whole college of cardinals." When the Duc de Crequi told Louis about Lenôtre embracing His Holiness, and his disbelief of the circumstance, His Majesty said—"Nothing more likely; he always embraces myself." Having become aged—eighty years—and feeble, Lenôtre implored the king to relieve him of his functions. After some hesitation Louis XIV. acceded, but on condition that he would visit him from time to time. About three years afterwards, Lenôtre was hobbling in the grounds of Marly; the king in his sedan-chair approached, welcomed his old servant, and ordered the carriers to bring also a chair for Lenôtre, so that they could be side by side and talk. "Why are you so silent and weeping,

Lenôtre?" "Sire, I'm thinking what would be my poor father's feelings were he to see me, side by side with the greatest king upon earth."

In 1675, Louis accorded Lenôtre letters patent of nobility, and wished to select for him a coat-of-arms. "I have selected it, Sire, a long time ago: three snails, surmounted with the heart of a Cabbage; how could I ever forget my spade, to which I owe all my fortune?" He was buried in the church of St. Roch, that is close to the Tuileries Gardens, in a side chapel that he had himself endowed.

Lenôtre was well read in the sciences; nearly the last act of his life was a report—and which is in existence, and very curious indeed to examine—addressed to the great Minister Colbert, recommending the adoption of Pascal's discovery, the wheelbarrow. C.

NEW OR NOTEWORTHY PLANTS.

STAPELIA CUPULARIS, *N. E. Brown, n. sp.*

ALTHOUGH, so far as I am aware, this plant has not been previously described, it is not a new introduction, as I first had it in cultivation in 1877, when the following description was made but never published, and since that time flowers of it from various sources have on several occasions passed through my hands. In a general way it much resembles *S. variegata*, but the erect, acute margin of the annulus at once distinguishes it from that and every other allied species.

Plant quite glabrous, except the margins of the corolla. Stems 2 to 3 inches long, 4 to 5 lines thick, obtusely 4-angled, angles with acute *s*, reading teeth. Cymes sessile, progressively 1 to 3 flowered. Pedicels $\frac{1}{2}$ to 1 $\frac{1}{2}$ inch long, about 1 line thick. Sepals $2\frac{1}{2}$ to 3 lines long, ovate-lanceolate acuminate. Bud pentagonal, flattened, with a short, blunt point, the sinistral angles projecting and slightly recurved. Corolla about 2 inches in diameter, with a saucer-shaped disc, ovate, acute, recurving lobes, ciliolate, with very short clavate hairs, and a nearly circular, cup-shaped annulus about 8 lines in diameter and 8 lines deep, with the margin erect and acute; the back of the flower is pale green tinged with purple, especially on the nerves, the face is slightly rugose, pale lemon-yellow thickly covered with dark purple-brown spots, which are often more or less confluent into irregular lines; the ground colour of the annulus is rather lighter than the rest. Outer coronal lobes $2\frac{1}{2}$ lines long, oblong, deeply bifid at the apex, with slightly diverging teeth, and a minute tooth at the base of the notch, pale-greenish yellow, dotted on both sides in the apical part with dark purple-brown, and on the upper side with a continuation of the dots down the centre, and a spot at the base; sometimes the margins only on the under surface are dotted. Inner coronal lobes two-horned, the horns equal, the inner erect, outer slightly spreading, both clavate, pale yellow dotted with purple-brown. The staminal tube under the corona marked with two distinct, or more or less confluent, bands of dark purple-brown. *N. E. Brown.*

ORCHID NOTES AND GLEANINGS.

FROM Mr. Joseph Broome, of Llandudno, we have received a bloom of *Cattleya Mendeli*, in which there were two sepals placed fore and aft, two petals placed right and left, and a straight erect column flattened from side to side, with two anthers in the same position as the sepals. The stigma and the ovary were entirely wanting. The accompanying diagram shows the position of the parts:

S
P at P
 at
 S

It must be classed as a case of regular peloria, attended with reduction both in the numbers of the parts in a whorl, and in a whorl itself. The pollinia

were well formed, so that a perfect male flower was the result. The pollen could be easily removed by an insect without the necessity for any special modification of the lip. If we accept the simplification of parts as an indication of "reversion," then, this flower represents an ancestral condition of greater simplicity. The opposite view, that it may be in some sense an advance, as implying a division of labour, may be held. The absence of the lip will put it out of court with the orchidist. *M. T. M.*

ODONTOGLOSSUM URO-SKINNERI.

In the choice collection of Orchids brought together within the last five years by D. B. Rappart, Esq., there exists one of the best coloured forms of *Odontoglossum Uro-Skinneri*. It is a plant which grows freely as a rule in skilful hands. The raceme of flowers is often 3 feet long. The sepals of this variety are ovate, and the petals roundly ovate, so that there is scarcely any intervening spaces between them; the ground colour is the greenish-yellow as seen in *O. excellens*, and the blotches are of a senna colour, irregular in size and position; the petals are heavily keeled at the back; the lip may be called brilliant for this species, the violet predominating, and the white standing out in relief over the whole of the oblate lip, which, together with the segments, form a circle. There were from twenty to forty eight flowers on each raceme. Why do not our Victorian medallists aspire to get this blood transfused? *J. Anderson.*

CYMBIDIUM LOWIANUM VIRIDE.

As this plant is of strong growth, producing roots freely, it should be given ample accommodation; the pots should have a liberal quantity of draining material, next to which should be placed a layer of sphagnum—this will prevent the soil blocking up the drainage; some good brown fibrous-peat, and double the quantity of light turfy-loam with some sharp silver-sand, will make a suitable compost. It is advisable to place the plant sufficiently below the rim of the pot so that it may receive a thorough soaking at the roots, as it requires much moisture during the growing season at the roots as well as overhead.

During the resting period, although the quantity of water given should be less, the plant should on no account be allowed to become dry, as this would materially injure it. An occasional sprinkling with the syringe when the weather is bright and warm will be advantageous, but during the dull months of winter it will be better to avoid this, and allow the plants to depend for moisture upon the water supplied to the roots occasionally; this will enable the spikes, which frequently begin to show as early as December, to come to full maturity. The temperature of the Cattleya house, and the atmosphere charged with moisture, will suit our plants admirably; when at rest, however, a temperature of 50° and less moisture will suffice. *Orchid Album*, vol. xi., part 132.

ONCIDIUM PHYMATOCILUM.

Sir Archibald Buchan Hamilton, of Smeaton-Hepburn, East Lothian, kindly sends us particulars of a raceme of *Oncidium phymatocilum*, recently flowered by him. The entire length of the inflorescence was 9 feet 7 inches, the longest side-branch was 2 feet 8 inches in length, the breadth between the extremities of two basal side-branches 5 feet. There were thirty-eight side-branches to the inflorescence.

CYPRIPEDIUM CURTISII.

One of the largest and most striking of its class, and occasionally a fine variety is flowered of which the fortunate possessor thinks very highly. A handsome and massive-looking variety is sent by W. H. Lumsden, Esq., Balmadie, Aberdeenshire (gr., Mr. Geo. Roberts), the chief peculiarity of which lies in the size of the labellum, which measures nearly five inches in circumference, and in the clear white of the ground colour of the petals, which are three quarters of an inch in width, and very regularly dotted with purple. *J. O'B.*

CIRRHOPELALUM COLLETTI.

A fine inflorescence is sent by D. B. Rappart, Esq., Promenade, Liscaud, Cheshire, of this handsome *Cirrhopetalum*, bearing four flowers of a yellowish ground colour marked conspicuously with purplish-crimson. The boat-shaped upper sepal has the apex prolonged and decorated with a purple plume. The smaller petals are also fringed at the tips, and the lower sepals lengthened out so as to form slender tails of about 4 inches in length; the lower part and the labellum are of a purplish-crimson colour. The species was introduced to this country from the Shan Mountains, where it grows at an altitude of 6,000 feet, and is therefore a species which requires but little artificial heat, unless it be in the growing season. *J. O'B.*

PEBISTERIA ASPERSA.

A plant of this comparatively recent introduction from Venezuela is flowering in the Royal Botanic Gardens, Edinburgh. The raceme carries flowers of a yellowish-brown, covered with brownish-red dots, and the lip is dark crimson upon the inner surface, but when lifted it presents a white blotch to view. Whilst growing the plant was afforded stove treatment, the compost about the roots being kept rather dry until the pots fill with roots. The plant is figured in *Lindenia*, t. 267.

DENDROBIUM MACCARTHEI.

Although this plant is rather difficult to grow, yet it is worth the trouble. The species is a native of Ceylon, requires a high temperature and moist surroundings, and even when growth is finished it should not be kept much cooler than when growing actively. The slender pseudo-bulbs are furnished with leaves mostly at the apex, whence also springs the short floral racemes of three or more blooms. These are about 3 inches in length, of a bluish-pink colour; the lip has a large dark blotch. A plant in the Edinburgh Botanic Garden has been in flower for several weeks past. *R. L. H.*

HOLLAND.

I saw in the spring some fine *Amaryllis* at the establishment of Messrs. De Graaff Bros., among them *A. Dr. Hogg*, deep red and pure white; and *A. Incomparable*, orange-scarlet and white. Among the prettiest *Anemones* were *appenina*, *blanda*, *fulgens*, *multipetala*, *Hepatica angulosa*, *memorosa*, *alba plena*, *bracteata plena*, *corulea*, *rosea* and *rosea plena*, *palmata*, *alba*, and *ranunculoides*. There is here also a fine collection of *Fritillarias*. Among *Hellebores* are the new varieties *Comète*, *Diadem*, *Dr. Moore*, *Duchess of Cleveland*, *John Bright*, and *Labyrinth*. I noted particularly interesting collections of *Lachenalia*, *terrestrial Orchids*, *Primula cortusoides*, and *Ranunculus alpestris*, *amplexicaulis*, and *millefoliatus*. There are numerous varieties of *Scilla*, *Sparaxis*, *Trillium*, *Adonis*, and some remarkable *Anigossanthus breviflorus*; *Anthericum aloides*, *graminifolium*, *Hookeri*, *Liliago*, *liliastrum* and *ramosum*; *Brodieas capitata*, *congesta*, and *coccinea*. I would also mention *Bulbocodium vernum*, *Camassias Cusicki*, *esculenta*, and *Fraseri*; *Caulophyllum thalictroides*, *Chelidonium japonicum* and *C. majus* fl. pl.; *Chionodoxa*, *Claytonia caroliniana* and *virginica*, *Cooperias Drummondii* and *pedunculata*, *Dielytra canadensis*, *Cucullaria eximia* and *spectabilis*; *Dodecatheons integrifolia*, *Jeffreyi*, *Meadia* var. *alba* and *elegans*.

Epimedium, *Erythronium*, *Freesia*, *Galanthus Elwesii*, *nivalis*, *Imperati*, and *plicatus*; *Heuchera sanguinea*, with its varieties *robusta* and *splendens*, deserve mention, as do also *Incarvillea*, *Ixiriolirion*, *Jeffersonia*, *Leucocorynum*, *Leucojum*, *Macrotonia*, *Marica*, and *Massonia*. Among many species of *Ornithogalum*, the best were *pyramidale*, *pyrenaicum*, *umbellatum*, *arabicum*, *Bergi*, and *lacteum*.

The *Oxalis* are all pretty; *Puschkinia libanotica* and *scilloides* are really gems. *Sanguinaria canadensis* makes an excellent rock-plant; *Saxifraga granulata* and *peltata* are known favourites; and *Soldanella alpina* and the white variety do well in shady parts.

Among the best *Ranunculaceae* I noted *Thalictrum aquilegifolium*, *flexuosum*, *japonicum*, *lucidum*, and *rubellum*.

The following flowers were charming: *Triteleia*, with sweet scented blossoms; *Uvularia* and *Zephyranthes atamasco*, from North America, bearing white flowers flushed with rose.

At Haarlem, among fields of *Hyacinths* and *Tulips*, is the establishment of Messrs. E. H. Krelage & Son. Here (at the end of April) *Hyacinths* were still in flower. I saw the following excellent and little-known varieties of *Hyacinths* cut, and destined for the Berlin Exhibition:—*Grandiose*, double white double *Tolstoi*, delicate rose; *Kestanjebloem*, also noticeable. There were still fine spikes left of the dark *Jacques* and porcelain-blue *Holbein* and *Johan*, good varieties for forcing. *Trilby* bears an orange flower, *Gounod* is blue; *Lemon-tree*, a compact and yellow raceme; *Hofdyk* is also yellow, as are New *Canary-bird* and *Gold-light*.

Narcissus of all species were blooming abundantly. Among the newest and best, I admired a new double form, *N. incomparabilis semipartibus plenus*, raised by M. Krelage, like a double *Poet's Narcissus*, but pale yellow.

There were some varieties of *Anemone fulgens* with large flowers, such as *Aldboroensis*, *Glory of the South*, and *Annulata*. The variety *Multipetala* is a decided advance upon the ordinary double flowers. The firm is very successful in hybrid *Fritillarias*.

Chinese *Paeonies* are very fine here; there are about 500 varieties in wide borders which promise to be very gay.

In the houses are many fine *Amaryllids*, some now out of bloom. There is a good collection of dark-flowered seedlings bearing five or six blooms on each raceme. *Cliveas* were handsome but nearly over.

Asparagus Sprengeri and *comoriensis* are largely grown at the Bloemhof Nurseries, as well as a climbing Fern, *Lygodium japonicum*. *Ch. D. B.*

NITRATE OF SODA v. SULPHATE OF AMMONIA.

THE importance of some nitrogenous artificial manure is now fully recognised among farmers, gardeners, and fruit growers—the main question to be considered is, what shall it be? This, to a very large extent, must be decided by the current price of the different materials in the market, and also upon the character of the soil to which the manure is to be applied. The subject has recently been dealt with and discussed by Mr. F. J. R. Carulla, F.C.S., in a short pamphlet, in which he advocates the use of sulphate of ammonia as equal in value to, if not superior to, nitrate of soda. It is now found that sulphate of ammonia can be obtained as a by-product from blast furnaces, which will probably cause this manure to become cheaper than formerly, and the manufacturers are naturally anxious to find a ready market for their commodity.

The commercial value of nitrate soda and of sulphate ammonia is based entirely upon the amount of nitrogen they contain, notwithstanding the fact that the action of the two ingredients when added to the soil are entirely different.

Both substances supply the growing crop with nitric acid, but while the ammonia of sulphate ammonia has to be converted into nitric nitrogen before the plants can use it, the nitrogen of the nitrate soda is available to plants at once. This may or may not be an advantage, and will depend largely upon the class of soil to which the different manures may be applied.

Weight for weight, sulphate of ammonia is cheaper than nitrate of soda; in fact, about 4 cwt. of the former are equal to 5 cwt. of the latter; the ammonia containing about 20 per cent. of nitrogen, while the nitrate contains but 15 per cent.

We have already mentioned that the benefit derived from the two manures will depend upon the character of the soil, and upon the description of crop to which they may be applied. In the agricultural experiments at Rothamsted, where the soil is of a somewhat

heavy loam, nitrate of soda generally gives the best results, although, owing to the liability to excessive drainage in the winter, this manure has always to be applied in the spring; while in the agricultural experiments at Woburn, where the soil is of a light sandy character, sulphate of ammonia usually gives the largest returns. *J. J. Willis, Harpenden.*

AMERICAN NOTES.

THE LOGAN-BERRY.

ONE of the most interesting of recent contributions from American experiment-stations is Professor L. F. Kinney's bulletin on the Logan-berry. This fruit has been widely advertised, and much talked of in recent years; but most of the experience reported by growers has been rather negative than positive. In California, whence the fruit came, it seemed to have achieved some success. Mr. E. J. Wickson reported from the Californian experiment-station in 1894, that it had "proved to be a robust grower, with large, handsome fruit, possessing a striking flavour, suggestive of a combination of that of Raspberries and Blackberries." In 1895, *Mechanics' Monthly* noted the ripening of a few berries at Philadelphia, and remarked that the canes would require winter protection. Professor Kinney concludes that the Logan-berry is the most promising new type of small fruit that has been grown at his station, but thinks also that it will require winter protection. The plants are propagated by stolons or cuttings. Seedlings can be grown, but are comparatively worthless. The Logan-berry is supposed to be a Raspberry-Blackberry hybrid.

PIMELEAS.

PIMELEAS are natives of New Holland, and the species commonly cultivated in our greenhouses are *P. ferruginea*, better known in gardens under the name *decussata*; *P. rosea* syn. *Hendersoni*, *P. spectabilis*, *P. Preissii* syn. *Neyperglana*, and *P. ligustrina hypericina* syn. *elegans*. The most suitable kind of soil for Pimeleas consists of two parts good fibry peat and one part turfy loam, and coarse silver sand in quantity sufficient to keep the whole porous and sweet; small broken charcoal is also a useful ingredient. The peat and the loam should be pulled to pieces, but need not be sifted, except for very young plants, and the whole should be well mixed together before use.

Drainage is an important point, and needs to be efficiently done by using three sizes of clean crocks, the largest to cover the bottom of the pots, which should be quite clean; the next size to be placed very carefully on this one, the smallest of all on the top of these; put some of the rougher bits of soil over these, the pots are then ready for the plants. The present is a good time to procure plants from the nursery, and as soon as received they should be shifted, so as to get them established before winter. Large specimen plants had better be repotted at the beginning of the month of March, as late summer potting, unless the plants are very carefully afforded water, is likely to induce growth that cannot be ripened that year. These large plants should have the soil loosened at the sides, and the roots set free; or the outside of the ball, if much pot-bound or matted, may be shaved off with a knife with advantage to the plants, and in that case there need be no increase in the size of the pots. Whichever method be followed, the surface of the ball should not be more than half an inch lower than before, ample space being left—say, 2 inches—for holding water. The soil should be put in round the old ball in small quantities at a time, making it firm with the fingers, and ramming it with a potting-stick before putting in more of it. A shift for a large plant should be not less than 3 inches larger in inner diameter than before. Young and vigorous Pimeleas may have a 2-inch shift, which usually will suffice for twelve months. Afford the repotted plants a copious appli-

cation of water, place them near the roof of the greenhouse, affording after a week abundance of air at all times; and when the new roots begin to permeate the soil, place them in a cold frame, affording full exposure in fine weather, but not allowing heavy rains to reach them; but put the lights over them, admitting, however, as much air as possible to the frame. Rain-water is best for these plants, and if manure be used in the season of growth, it should be of a very mild description, water just stained with guano and soot being good for them from May to August. In hot weather, afford the plants a syringing in the evening, and damp the ash-bed on which the plants stand in the frame, and the ground beneath the greenhouse stage. In the winter, just as much water is needed at the root as will prevent flagging. The temperature of an ordinary greenhouse suffices. The shoots made in spring and early summer may be pinched once before the end of June if the plants have reached their full size, and twice or thrice if they are young. Young plants may have the flowers removed with a small piece of the shoot in April, and be started into growth sooner than is possible with flowering plants of half-specimen or specimen sizes. With a few neat sticks, it is possible to regulate the head, and give symmetry, the first three species named being of naturally compact habit. *Pimeleas ligustrina hypericina* and *P. Preissii* make more slender and less compact growth than these, and which more than one stopping in the season in the case of old plants would tend to spoil, although several stoppings of the leading shoots would be permissible in the case of young plants. It is very necessary to keep the soil free from moss, to stir the surface frequently, and to top-dress the old ball in the autumn, and also in the spring in the cases of plants that are not going to be re-potted at that time. *H. T. M., Stoneleigh.*

THE ROSARY.

JULY IN THE ROSE GARDEN.

NOTWITHSTANDING the backward condition of our Roses about the middle of June, the grand weather at the end of that month brought them on very rapidly. We know what a vast difference a few days of real summer weather has upon all flowers, but I have seldom noticed the Rose come along so rapidly as during the present season.

Mulchings will have a great effect upon late-summer and autumnal bloom if applied at once, taking care to hoe the soil deeply before applying it, for unless one can maintain the land in a moist condition by mulching, artificial waterings do but little good. To afford light applications of water is almost useless; indeed, I believe they do more harm than good, as they serve only to excite the roots near the surface, and then leave them to be parched after the moisture has evaporated. Not only does a mulch prevent this, but it supplies plant-food as well at the time when it is of most benefit to the plant.

Early-flowering Climbers upon walls, the main crop of blossoms on these will soon be over, and it will be well to use the knife freely and cut away the bulk of the wood that has flowered, thus allowing space for new shoots to be laid in, and preventing much of the fresh growth from forming upon shoots that would be cut away next season when pruning. At the same time, a few thorough applications of liquid-manure will be a great help to all wall Roses. We do not sufficiently bear in mind the fact that the soil of a border near the wall is liable to become very dry, and as we cannot have good Roses next year without a supply of flowering-wood made this year, it is well to afford encouragement to the plants at the right time. A free use of the garden-engine or powerful syringe, with water only, has a good effect in clearing the plants of insects, and is of help to the former in hot weather.

Budding.—One of the most important items in Rose-culture during July is budding, and unless the Briars intended for standards are budded early the bark seldom lifts well. Nor is it possible to bud all

suitable shoots at any one date, some few of them being far more advanced than others. It is not a good plan to cut away any of the Briar growth just previous to inserting a bud, as the bleeding, which ensues from a wound, sometimes causes the bark to cling, and even when this is not so, before the bud can be inserted, the partial check to the flow of sap cannot be beneficial to the inserted buds. The operation itself has been so often described that I will only warn my readers against too tight a tie when securing the bud; still, a bud must be tied in with sufficient firmness if a proper union is to take place. *A. P.*

THE EXCLUSION OF FOG FROM HOTHOUSES.

DR. SCHUNCK, President of the Society of Chemical Industry, addressing the annual meeting of the society at Owens College, Manchester, on Wednesday last, referred to the manner in which the atmosphere of large towns was poisoned by smoke, and to its ill effect upon the population. The great distress caused to those suffering from pulmonary complaints by the fogs so often prevailing in these towns had, he said, no doubt more than once suggested the possibility of filtering the air before allowing it to enter into our dwellings. The difficulties of such a device did not seem great in themselves, the real difficulty arising from the habits and prejudices of the people, who could not understand the possibility of ventilation, except it be through windows and doors. In his paper on "The Effects of Urban Fog upon Cultivated Plants," Prof. T. Oliver mentioned with favour a plan devised by Mr. Toope, an engineer of Stepney, who caused the air entering his hothouses to pass through boxes containing trays with sticks of charcoal, before impinging on the hot-water pipes, an out-draught being secured by means of "exhaust caps" placed on or near the ridge of the house. The plan, in Professor Oliver's opinion, was an efficient one. That any such plan would succeed in private houses, as at present constructed, was very doubtful.

Dr. Schunck ventured to suggest, though he did it under fear of censure, that a moderate amount of smoke might actually be beneficial to vegetation by covering the leaves and other parts of plants with a thin coating of carbonaceous or tarry matter, and thus rendering them unpalatable to insects. Of course, the amount would have to be exceedingly small, for if excessive they would soon experience deleterious effects, such as were seen in the scanty and blighted vegetation in the immediate neighbourhood of smoky towns.

CULTURAL MEMORANDA.

CODIÆUMS SYN. CROTONS.

WHERE these ornamental stove shrubs are required in large numbers, the following method of culture, which is largely practised on the Continent, is well worthy of a trial:—In March the tops are mossed round, and roots thus induced to form, then these are removed, and potted in soil, and early in May, when well rooted, they are planted out at about 15 inches apart in beds made up in low span-roofed houses. These beds, about 12 in. in depth, consist of loam, sand, and a small quantity of peat. The house is shaded for a few weeks, that is, till the plants have become established, and from that time onwards they are fully exposed to the sun, and a close, moist atmosphere is maintained throughout the summer months. By the end of the month of August the plants have grown into straight-stemmed, well-coloured specimens, from 2 to 4 feet high, and they are then dug up and potted, mostly in 32-sized pots, though the size of the plant determines that of the pot most suitable for it. A little extra attention paid to shading, syringing, and affording water at this period is well repaid by the plants retaining their leaves right down to the pot. After a time, a cooler temperature is an advantage, as it enables the plants to harden before they are required for decorative purposes. This method of culture saves a good deal of labour in watering, potting, &c., and fine, healthy plants are obtained. *H. T.*

THE DENDROBIUM ORCHID-BEETLE.

Diaxenes Dendrobii (Gahan).

In December of 1896, I was asked to visit the Orchid-house of a larger grower in Midlothian, where the Orchids were being ruined by some agency or other. On examination of the unhealthy plants, I found many of the pseudobulbs tunnelled by larvae of a longicorn beetle. Later on, at the Royal Botanic Garden I bred out the beetles from these larvae, and the pest proved to be as suspected, *Diaxenes dendrobii*, G.



FIG. 11.—ADULT BEETLE ON DENDROBIUM CARINIFERUM. (Enlarged.)

With the beetles thus won, I proceeded to work out the life-history of the pest in one of the glass-houses at the Botanic garden with Orchids provided for the purpose.

When my experiments and observations are completed, which will not be for some months yet, I will publish a full account of the *Diaxenes* and its work, but meanwhile, I think it may be helpful if I issue this preliminary note, warning those interested in Orchid cultivation to be on their guard. I am induced to do this at the present time, as I have, in the course of my experiments, just proved that the beetles will and do breed in our Orchid-houses, a fact which up till now, has been doubted, and indeed, declared improbable. *Diaxenes dendrobii* is a pretty brownish-grey beetle, from one half to five-eighths of an inch long, with long antennae, and with whitish or yellowish lines along its upper surface (fig. 11). The grub (fig. 12), which lies inside the pseudo-bulb, is whitish and legless (but still very active), with scaly brown head and biting jaws. When full fed it makes a cocoon out of the fibres of the hollowed-out pseudo-bulb (fig. 13), from which cocoon, after pupation, the beetle emerges.

Diaxenes is injurious, both as imago and as larva. The grubs mine into and

tunnel out the pseudo-bulbs till, it may be, merely the outer skin is left, while the beetles feed on pseudo-bulb and leaf and root (fig. 14).

Undoubtedly the pest has been introduced in Orchids imported from Burmah. In March of this year I examined in the Botanic Garden some *Dendrobium nobile* Orchids freshly imported from Burmah, bought at a sale in London; and in some of these plants I found larvae which now, as I write, have reached the beetle stage. Doubtless a number of similar plants will have been distributed over the country, and with them the pests, for which a careful outlook should be kept. The beetles should be killed whenever found, but very careful looking is required to find them. Feeding chiefly by night and resting by day (often at the base of the plant), they escape notice; and as, in addition, they are protectively coloured, until the eye gets accustomed to them great difficulty is experienced in picking them out. That the beetle is present, however, may be known by its work, for which see the figures.

The pseudo-bulbs which harbour the larvae can be detected by the withered appearance, and to begin with, by the blackish or brownish discoloration of one side, this discoloration marking the progress of the



FIG. 12.—

2. Full-grown larva, somewhat enlarged.
3. Pupa removed from cocoon, dorsal surface; twice nat. size.
4. Pupa, ventral surface; twice nat. size.

enclosed grub. By squeezing the pseudo-bulbs too between the fingers the attacked ones give a little, lacking the firmness of those of healthy plants. The enclosed grub should be cut out and destroyed. From what I have seen, I have no hesitation in describing *Diaxenes dendrobii* as the very worst of Orchid pests, and should it once get a footing in an Orchid-house, there is much discouragement and disappointment in store for the owner or cultivator.

Diaxenes dendrobii takes its name from its infesting the genus *Dendrobium*, but I am sorry I have to add, that the beetle seems willingly to feed upon



FIG. 14.—PSEUDO-BULB OF LÆLIA ANCEPS GNAWED BY ADULT BEETLE. (Natural size.)

almost any Orchid with marked pseudo-bulbs. In my experiments, *Dendrobium*, *Cochleya* (fig. 13), *Cattleya*, and *Lælia* (fig. 14), have all been attacked, and at present I have a brood of my own rearing in *Lælia anceps*. As I am desirous not only to get a complete knowledge of the spread of *Diaxenes* in Britain, but also to make my report when issued as helpful as possible, I will be much obliged if anybody who has had experience of the beetle or its work will communicate with me here. I need hardly add, that any information thus received which might



FIG. 13.—COOCON IN SITU, SHOWING EXIT-HOLE OF BEETLE IN PSEUDO-BULB OF DENDROBIUM. (Rather less than nat. size.)

prove helpful, will be fully acknowledged. *R. Stewart MacDougall, M.A., B.Sc., Royal Botanic Garden, Edinburgh.* [We add an illustration of a similar beetle, *Diaxenes Taylori* (fig. 16), found on *Saccolabium*. *Gard. Chron.*, June 11, 1887. Ed.]

FRENCH CHERRIES.

CHERRY-TREES are grown everywhere in France, although in the south their cultivation is limited by the intense warmth. The fruit does not require a particular kind of soil, though one that is deep, dry, calcareous, and silicious, is preferable to an argillaceous, compact, and humid soil. In the opinion of French growers, the best site for a Cherry-orchard is a hill or open field, where air and light are readily accessible. If grown near to a wood or forest, the fruit is likely to ripen too quickly, and be devoured and injured by birds. A cold soil and foggy atmosphere greatly impedes the development of the plant, and there will be little blossom; too much heat is also detrimental. When the trees are grown as espaliers, the tops should be allowed to incline towards the north, and in this way the maturing of the fruit will be retarded. Sometimes trees are grown by the seaside, but it is not desirable. The mode of increase is by seed, and

the French grower chooses for seed those fruits which grow on the most flourishing trees. He waits till the fruit is entirely ripe, and then takes a few Cherries at hazard, cracks the kernel to ascertain if the seed be in a healthy condition, and that it is sufficiently matured to germinate. The seed is sown as soon as possible after being gathered, otherwise the kernel is apt to become rancid or musty, when no germination is possible. If, how-

Cherries are large'y consumed in France. The Bigarreaux are not so digestible as some others, and they should therefore be eaten in moderation. The Guignes, or white heart Cherry, and the Griottes are dried for consumption during the winter, and are stored like Apples on shelves. The last two species are those in demand for making jam, and for preserving in brandy. The French have many ways of cooking Cherries; and a very good kind of oil

Among some of the choice varieties of Cherries grown in the suburbs of Paris are l'Anglaise and La Royale d'Angleterre [Anglaise Tardive is late Duke; and Anglaise Hative, May Duke. Ed.]; both kinds are early and of the finest quality. By the end of May both varieties are ripe for gathering; in colour, they are of a deep red, and though acid, are very palatable in flavour. The Anglaise variety is that most in demand for exportation, and enjoys great popularity as an eating or preserving fruit. The Montmorency [Yellow Ramonde. Ed.] is another fine variety, and it is so much thought of that the French call it "*la reine des cerises*" (the queen of Cherries) [although Hogg in his *Manual* says that it is fit only for preserving. Ed.]. The fruit is of a medium size, bright red in colour at first, and becoming darker as it becomes quite ripe, bristly acid, and flesh tender. July is the month *par excellence* when Montmorency Cherries are ripe. There are two varieties of Montmorency, one long and the other short stalked; both are hardy, and the blossoms able to withstand sharp frosts, which may serve to explain their extensive cultivation. There are no fewer than twenty different varieties of Cherries in France; the latter number are again subdivided into others, of which nine are suitable for orchards, and nine others for gardens. The Bigarreau is largely grown in France also; of this kind there are two varieties, and both are good; the first is half-red and half-yellow in colour; the



FIG. 15.—*OEOLGYNE CRISTATA* SHOWING LEAVES CHARACTERISTICALLY INJURED BY MATURE BEETLE.

(Natural size.) From a drawing by Mr. A. Hogg. (See p. 48.)

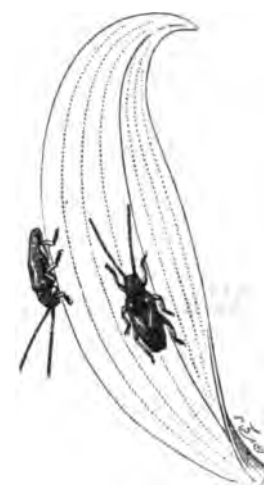


FIG. 16.—*DIAPARSES TAYLORI*
(See p. 48.)

second category is black and red, the latter is very productive, and chiefly raised upon a light dry soil; the red and black Bigarreaux are subject to attacks from a worm known as l'Ortalide.

Lower Burgundy devotes considerable attention to Cherry culture, the Cherry orchards being mostly situated on hills. The fruit is usually sold on the spot, at so much per 100 kilos., the buyers being brokers who establish themselves temporarily in the villages in the districts in which the Cherry orchards abound, buying up the Cherries wholesale, and having the advantage of being on the spot to superintend the packing of the fruit. The fruit is packed in baskets of rectangular shape, 60 centimetres long. The brokers accompany each cargo to the nearest railway station, from whence the fruit is sent off by special fast train direct to Paris, and thence to London, Berlin, St. Petersburg, and other important capitals. The department of the Yonne is the true cradle of the French Cherry-growing industry. Long before railways were constructed in that part of France the trade was flourishing, especially that of the Anglaise variety, which was then, as now, in much repute. The Cherry baskets at that day were carried on the backs of donkeys, the animals bringing the fruit to the nearest village, where it was exchanged for poultry, milk, and other commodities.

ever, through some unavoidable cause or other, the seed cannot be sown at once, the kernels should be carefully stratified—that is, covered in alternate layers of kernels and sand. The ground to be sown should have been carefully prepared, and the kernels should be sown either broadcast by hand, or in furrows. The seeds germinate by the end of the spring, and the shoot is let alone for one, two, or three years, according to the purpose for which the trees are intended.

is extracted from the kernels, which is largely employed by pastrycooks in flavoured cakes and sweets. The gum or resin exuded by a Cherry-tree is much in favour in the medical world [?]. When this resin is mixed with water, it spreads, but does not dissolve, and it is sometimes employed as a substitute for paste. The wood itself, which is tenacious, is much in request for cabinet work and for the manufacture of tobacco-pipes, these being the only two industries which employ the wood of the Cherry.

Forty-five years ago it was not unusual in France to exchange one pound of Cherries for one dozen of eggs or half a pound of butter; four pounds of the fruit would purchase a fowl; any grower that brought 100 lb. of Cherries to the market received in exchange 20 lb. of butter, 100 eggs, and half a dozen of fowls!

Of course, when railways were made, quite a different order of things took place, which resulted in an increase of the Cherry trade. At St. Bris, it is a pleasing sight to witness in the month of June as early as 3 o'clock in the morning, all the inhabitants of the surrounding villages starting in a body en route for the fruit plantations. At each corner of the streets stand merchants, whose sole business consists in weighing the fruit and purchasing it. No credit is ever given. "Cash with order" is always the rule. St. Bris, which is a very large and important Cherry-growing village, has a special exchange or hall, where buyers repair each day, and ascertain the latest market quotations, after which they transact business accordingly. At 12 o'clock noon the picking of the fruit ceases; the afternoon is devoted to conveying the baskets full of Cherries to the nearest railway station. When the harvest has been a good one, sixteen railway trucks represent one single morning's picking. During one year the railway stations of St. Bris and Auxerre transported over 1,000,000 lb. of Cherries between them. For miles and miles only Cherry trees are to be seen; they are planted between Vines, and prosper exceedingly. The picking of the fruit, as a rule, is generally the work of women and children; no outlay is required, save cost of culture, hence the proprietors reap a good profit. In good years St. Bris and district sell as many as 100,000 francs-worth of Cherries. The most important Paris suburb where Cherries are grown is Villiers Saint-Frederick, in the department of Seine-et-Oise; it is but a small village, having but 300 people, and is built upon a dry sandy soil. The inhabitants give themselves up wholly to cultivating the Cherry, and boast of being able to send several thousands of francs worth of Cherries to Paris every year. *Edward Conner.*

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

Vanda teres.—Very soon after this species has flowered, it commences to make fresh roots. If the plants are taller than is desirable, cut the stems off at about 2 or 3 feet from the top, then fasten the severed pieces to long, upright teak rafts, containing three or four rods, each rod about 1 inch apart, to allow air to pass freely between the roots. Half-a-dozen or more stems may be fixed to each raft, and the lower part should then be inserted in a pot, and made secure with crooks, which may fill the pots to within an inch of the rim. The base of the stems should rest upon the drainage, over which place a thick layer of living sphagnum-moss. If large quantities of this *Vanda* is desired for cutting from, and house space is limited, a bed of sphagnum-moss should be made upon the stage, and the tops or cuttings thickly inserted into the moss, and supported in an upright position with stout sticks. Rough, unplanned teak rods, about half an inch in diameter, are preferable to the ordinary stakes. The old portion of the stems if allowed to remain upon the rafts will make fresh shoots, and by next season may make nice flowering plants. During the growing season the species should receive plenty of direct sunshine and copious overhead syringings several times each day. The sunny side of the Mexican house is the best place for it, but a similar position in a plant stove will do. Until the young roots have taken a firm hold of the new wood the plants should be kept rather close, and thinly shaded from hot sun. Close the house early in the afternoon when the sun is shining full upon the plants, at the same time give the stems a good syringing with water. The new hybrid *Vanda*, Miss Joaquim, figured in *Gardeners' Chronicle* a few weeks ago, requires similar treatment. Plants of *V. Hookeriana* are now showing their flower-spikes, and require much sunlight and copious overhead syringing daily until the flowers expand. This species requires the hottest temperature available throughout the year.

Cattleya-house.—*C. Rex*, *C. Dowiana* and its variety *aurea*, will be showing their flower-sheaths, and if moisture be allowed to get into the growths the flower-buds may decay. Closely examine the plants every day, and there may be seen a dark brown sheath encircling the base of the current season's growth. If this sheath be found the least damp, it should be split open to allow the moisture to evaporate. Failing this the new bulb will turn black, and must be cut off immediately, or the remaining part of the plant may become similarly affected. After the sheath has been opened, keep the plant rather dry at the root for a few days; this will assist the moisture to evaporate, and tend to save the life of the plant. Plants of *C. gigas* now in bloom, or that have just passed that stage, should be kept rather dry for a week or two, which will be conducive to the formation of numerous roots. Repot plants of *C. gigas* immediately they commence to make new roots from the base of the newly-made growths. When potting, afford ample drainage, and use the best fibrous peat and sphagnum-moss in equal parts, with a few pieces of crocks intermixed. Elevate the plants a trifle above the rim of the pot, and use a few sticks to hold them firmly in position. Place the plants on the side-stage of the house, with the leaves close to the glass. Water the plants with care after repotting, sufficient to encourage the new roots to enter and establish themselves in the new compost is alone necessary. The plants when well rooted require a cool or intermediate temperature, and plenty of light and fresh air while at rest.

Cool-house.—*Epidendrum vitellinum* is commencing growth, and should be afforded fresh compost without delay. This useful species may be grown in an ordinary flower-pot, or in shallow suspending pans, using a mixture of peat and sphagnum-moss for them to root into. Keep the bases of the young growths well above the compost, and they will be less liable to turn black. The thin-bulbed *Laelia harpophylla* should be repotted, and placed in the cool-house until growth recommences.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Pyrethrum roseum.—The double and single-flowered varieties of this plant are much valued for garden and house decoration in the early summer, and any increase of the stock of plants, or division of those which have become too large, or which do not now throw fine flowers, may be undertaken. On taking up a clump, throw aside the weak shoots from the centre, unless the variety be scarce, or the stock in general not plentiful. The other pieces may have the points of the longest leaves removed, but much of the roots should be reserved, and potted into 48's, using a sandy sort of loam. Stand these in a frame, and keep rather close and shaded till growth recommences, when shading should be gradually discontinued, and full exposure afforded. If a frame be not available, stand the pots on the north side of a wall, and damp the plants over occasionally. When potted in this manner the plants soon gain strength, and they are ready for putting out early in September. Half-a-dozen of good double-flowered varieties are *Mont Blanc*, white; *Hermann Stenger*, crimson; *Lady Blanche*, flesh colour; *Nemesia*, orange-red; *La Vestale*, pink; and *King Oscar*, crimson-scarlet. There are numerous named single-flowered varieties; but as a good variety of colours may be raised from a packet of seed of some good strain, only enthusiasts buy those. Seeds may be sown at this date, the young plants being wintered in frames, and planted out in the spring.

Narcissus poeticus, and other varieties, should be lifted where required, if not already done, the bulbs assorted and re-planted early. Where home-grown bulbs of *N. ornatus* are used for forcing, they should be lifted and potted this month, as the bulbs form new roots early if left in the ground, especially after heavy rains following a period of dry weather, which is the case with various *Daffodils*. The double-white *Gardenia*-flowered *Narcissus* produced more perfect flowers this season than I have known them for some years past, which I attribute to the moist winter and spring experienced this year, and the *Narcissus* bulbs being in good condition generally.

General Work.—The great heat and drying winds have proved trying for many of the occupants of the flower-beds and borders, and herbaceous perennial subjects are being forced into bloom prematurely. The shrubby *Phloxes* soon betray the effects of heat and drought if not well mulched and afforded water,

losing their lower leaves, which makes them appear unsightly. If *Dahlia* blooms are required for exhibition, three stakes should be placed in a triangle around each plant, inserting them about 15 inches apart at the base, but spreading outwards towards the top, and three main shoots should be tied to them, the others being removed, and laterals from these kept pinched out. For ordinary garden decoration where flowers in quantity are required, much disbudding is not necessary, especially if the plants have been grown on from spring-struck cuttings. Where old roots are planted, a little early thinning of shoots is advisable, afterwards allowing the laterals to extend, and thus ensure a good head of bloom for effect. If the ground beneath the *Dahlia* is not already mulched, this should forthwith be done. *Pansy* and *Viola* seeds may be sown in shallow drills drawn on a somewhat shaded border, the soil being broken down finely, and the drills watered with a fine rose-can a short time before sowing the seeds. If sown now, plants will be ready for planting in the beds in late autumn. The shoots of *Verbenas*, *Ivy-leaf Pelargoniums*, and such-like trailing plants, should be kept pegged-down until the ground is covered, removing all dead leaves and flowers, especially those of the summer-flowering *Violas*, on which plants form freely, quickly exhausting the plants if left.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Grape Vines.—The Vines from which the fruit is removed should be afforded occasional syringings, and copious applications of water to the borders. The lateral shoots should be removed, so that the future fruit-buds may obtain all the light and air possible. Vines with ripe Grapes should have a genial, buoyant atmosphere, but one that is not very dry, or shrivelling of the Grapes will occur. Damping down should take place early in the afternoon, so that the moisture may in great part evaporate before nightfall. If black Grapes have to be kept in good condition for a long time, the Vines should be shaded in bright weather. Later Grapes will require a good deal of attention at this date, carefully examining them at short intervals to ascertain where the bunches need a little thinning, but taking care not to destroy the compactness of the bunches. Afford tepid liquid-manure to the borders before these become dry, thereby keeping the berries increasing in size as long as possible. Remove all but the largest and strongest shoots, taking a few at a time, so as to avoid checking growth. Any variety that is liable to split, namely *Madresfield Court* and *Black Morocco*, should have a little less humidity in theinery—not easy of accomplishment when these Vines are mixed with others. In that case the best method to follow is to let the laterals run a bit wild just as the fruit commences to colour, and not to damp the ground underneath the Vines in the afternoon, and not at all if the day be dull and sunless; and if these measures have no effect, bore a small hole or cut a notch in the shoot just behind every bunch. I think one of the chief causes of splitting is that the borders are kept too dry in the earlier stages of growth, thus causing a check to growth; then affording water freely, causes a sudden accession of sap, which the skin of the berry is unable to accommodate. Afford free ventilation on hot days by opening the back and front lights, especially in old-fashioned houses, where, probably, the foliage is close up to the glass, as it is in such houses that the foliage is apt to get scalded. Follow up the syringing between the bunches with clean, soft water, whenever practicable, this being of great assistance to Vines in hot weather; and leave a trifling amount of ventilation by the upper lights after the Grapes begin to colour.

THE KITCHEN GARDEN.

By W. POPP, Gardener, Highclere Castle, Newbury.

Cauliflowers.—If there is a likelihood of a break in the supply by reason of the bulk of the crop turning in altogether, some of these least forward may be pulled up and stored in a cool shed in moist soil, where the head will remain fit for use for a week or ten days afterwards. Keep a sharp out-look for caterpillars; and to prevent the heads from turning greenish, break a leaf or two over them as soon as they begin to form, or tie up the leaves with matting, which may take longer in doing, but it is the most effective method of excluding sunshine.

Cabbages for Early Spring Use.—A sowing may now be made of *Ellam's Early*, *Sutton's Flower of*

Spring, or the true Wheeler's Imperial, another sowing being made in about ten days later. It depends on the nature of the season which sowing will be of most use. In southern counties the Cabbage from the earlier sowing are often "proud," that is, they grow too large, and turn in during late autumn and early winter; whilst, if September and October should be wet and sunless, the early-sown plants produce the best Cabbages in the spring. Choose an open situation for the seed-bed, and a moderately rich soil, sowing the seeds thinly in drills drawn 8 or 9 inches apart. Protect the seeds from the depredations of the birds by using fish-nets, or by rolling the seed in powdered red lead. Plant a good breadth of Colewort as soon as the plants are ready, these being the most useful of vegetables. They do not want much space in which to grow, 1 foot each way being ample. If the weather and the soil are dry at planting time, the plants should be put out in drills that have been well moistened a couple of hours before, and be again afforded water after the planting is done. When the ground is hoed, the drills will be all up.

Parsley.—A good sowing of Parsley may now be made, and the thinnings when large enough to handle may be pricked out into beds. If the rows are so placed that frames can be placed over them, Parsley leaves may be gathered in good condition in any weather in the winter and early spring.

Endive, Lettuce, &c.—A good breadth of Endive may now be sown, the round or broad-leaved Batavian being a useful variety for sowing at this season. The seeds may be sown in rows 15 to 18 inches apart, and thinned when large enough to 10 inches in the rows; and the thinnings if planted on a sheltered border will form a good succession, or seed may be sown broadcast in a bed and the seedlings transplanted. A small sowing of summer Lettuce should be made at this date for coming in late in the autumn, Hick's Hardy White being a good variety for sowing at this date.

Watering, Mulching, &c.—Celery, French and Runner Beans, and Peas, will all require abundance of water at the roots; but if only dribblers can be supplied the work is better left alone. If water is scarce, it is better to afford it thoroughly to one or two rows of any given crop than to waste it by dribbling over a lot of land. Mulchings of rotten manure, or short litter, should follow the application of water.

PLANTS UNDER GLASS.

By G. H. MARCOCK, Gardener, Luton Hoo Park, Luton.

Schizanthus retusus and pinnatus.—A sowing of seeds of these plants may now be made, for spring and summer flowering. These varieties of Schizanthus do very well in ordinary soil out-of-doors if sown during the months of March and April; but for growing in pots, the soil should be made somewhat rich. The better method, and one that avoids pricking-out, is to sow a few seeds in a number of 3-inch pots, thinning the seedlings to one in a pot, and shifting them into 8-inch pots when getting well rooted. A few of the plants should be retained in the smaller pots, for employment in rooms, in jardinières, &c. The plants raised now should be kept in cold frames and near the glass, which is easily done with movable staging, or boards supported on something; and at the approach of winter remove them to a greenhouse shelf, where they can get plenty of light.

Humea elegans.—Serviceable plants of Humea may be obtained next year by sowing seeds at the present date. These graceful plants are well worth all the care that can be bestowed upon them, being equally pleasing objects in the conservatory or the dwelling as in the flower-garden. The soil used in the seed-pans should consist of leaf-mould and a small quantity of loam, with sharp sand added. First afford the seed-pans water, then when the surface is firm sow the seeds and cover slightly, and lightly sprinkle the surface with water. Humeas dislike heavy watering, and water must therefore be sparingly applied. When the seedlings are large enough to be handled, at once prick them off singly into 3-inch pots, retaining every root possible, and keep the plants in a cold frame till October, then remove them to a greenhouse, avoiding drip, and a close air, and not wetting them overhead.

Linum catharticum.—At this season abundance of seed is obtained, and these plants, and, providing the seed is not overdone, one can scarcely overdo root-feeding. At this time till well into the month of August the quantity should be reduced.

Winter-flowering Plants in Cold Frames.—During warm weather, it is difficult to keep red-spider and thrips in check; much, however, may be done by a free use of the syringe, and by dipping those plants that are in pots in a tub containing a safe kind of insecticide. Let all stopping and tying-out receive attention betimes, not allowing the plants first to get into bad order.

Pentas carnea is a plant that requires frequent stopping at this season, or great lankiness of growth ensues, and the foliage should be well syringed with rain-water. Well-rooted plants should be afforded liquid-manure occasionally, and be plunged in a bed of tree-leaves in a cold pit, giving air carefully, so as to avoid draughts of cold, until the plants have got accustomed to their quarters.

Libonia floribunda and **Reinwardtia tigrina** should be dipped occasionally in an insecticide to free them from red-spider, syringing alone being not entirely sufficient to do this. Any neglect of this remedy will render the plants useless for decorative purposes.

Abutilons growing in pots, if robust, should have the points of the main shoots nipped out, and plenty of water afforded them, fumigation being done if aphids has settled on them. Afford air by tilting the lights.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Fruit Tree Budding.—The time is at hand when the budding of fruit-trees is performed, the bark running freely if copious rains occur to stimulate growth. The first kinds of fruits to be budded are Cherries and Apricots, Plums, Peaches, and Nectarines following in the order named. The buds should be plump and dormant, and taken from outside shoots of the trees, and having cut off the leaves and half the length of the petioles, drop the shoots into a deep water-can having 1 or 2 inches of water at the bottom. Make sure that each variety is correctly labelled, and that the label belonging to it is securely fastened to the first stock in the row operated upon. The budding is exactly similar to that pursued with the Rose, excepting that in the case of dwarf stocks, the bud should be inserted in the rind about 9 inches from the ground-level in the case of Plums, Peaches, Cherries for training on walls, Apples on the Crab, and Pears on the Pear-stocks. In the case of standards of the Cherry, the bud may be put in at 6 to 8 feet from the ground on stocks that have been two to three years planted, and once cut back in that time. The same practice is pursued with cider Apple-trees by some cultivators, in the belief that the wilding Crab makes a stronger stem to stand against animals than the ennobled Apple. The few varieties of Pear that do well on the Quince should be worked low down, so that the point of union may be covered with the soil at the first transplanting. In the course of a few weeks, if the leaf-stalk that was left on the bud drops off, it is a sign that the bud has taken; if, on the contrary, it withers, the bud is dead, and another may be inserted on the chance of its growing; and, in any case, the stock will serve for grafting in the spring, in the case of Pears, Apples, Plums, and Cherries.

Grape-vines growing against south and west walls should be kept well supplied with moisture at the roots, liquid-manure and clear water being afforded alternately. The berries should be properly thinned, more or less, according to variety. Keep the bearing-shoots pinched back to within one or two joints of the bunches, letting one shoot carry one bunch, and laying in a shoot at the base of each, to serve as the bearing-shoot another year. Be careful not to crowd the Vines with shoots, but keep them thinly distributed, so that the principal crop of leaves may attain full development; and remove entirely all the weak and superfluous shoots. Some cultivators lay in long shoots, and take two or three bunches from each; others adopt the short-spur method, retaining always a ground-work of old stems—and each has its advocates.

THE APIARY.

By EXPERT.

Adaptors.—Bell-glasses worked on straw-skeps (especially dome-topped ones) should always be set on a platform of thin board cut to the size of the glass. These adaptors, as they are called, enable the bee-keeper to remove the glass when full without breaking the combs, and unless used in this kind of bee-work, all kinds of mischief follows at times. It is

not uncommon for the bees to carry the combs upward as described above, but if the bell-glass is covered by a warm "coey," such as is used to keep the teapot warm, the bees will take possession of the glass, and soon find the guide-comb fixed above for them to build from. It is, however, too late to place bell-glasses on skeps in Kent. They should have been put on at least a month earlier. We have known a 10lb. bell-glass to be filled in four or five days or less in a good season.

Finishing off Sections, &c: Stocks that have Swarmed.—Hives which have sent off two or more swarms generally fail to complete any unfinished sections or supers which may then happen to be on them, therefore remove all surplus boxes, sections, &c., immediately on the issue of the second swarm, and give them to other stocks to finish. After the middle of July it becomes more and more difficult to get supers of all comb-honey finished off and sealed over. To give empty sections or supers very late in the season is useless; with care, however, and a little judicious handling, unfinished ones may be changed about from hive to hive till all are completed. When it comes near the end of the month, any unfinished sections left should be removed unless they can have a chance of being completed at the heather.

Extracting.—As the honey season draws to a close, bees usually begin to develop thieving propensities, and unless the mischief is guarded against, and promptly checked wherever possible, serious trouble may follow. The first symptoms may be detected by observing bees flying about the entrances of other hives than their own. When this is seen, great caution is required, and it will be found necessary to do all extracting indoors, and to keep the windows and doors of the apartment closed while the work is going on, to avoid attracting bees to the house. Be careful also not to get frames "mixed up" when a number are being operated on. Mark or number them so that they may be returned to the same hives, and occupy exactly the same positions as before. A very perceptible difference will in some years be found in the quality of honey in various hives, and when this is so, each kind should be graded and kept apart if the produce is intended for sale. We once more urge inexperienced bee-keepers never to extract from frames containing brood, all sorts of mischief are likely to result unless this precaution be taken. Return frames (after extracting) in the evening, and close up the hives quickly if any signs of prowlers are seen about. If the bees hang about sluggishly at the entrances of hives in hot weather, it is a sign the combs are full of honey, and no time should be lost in extracting from the outer combs when the bees will soon start work again.

Feeding Swarms.—Strong first swarms require feeding on cold wet days. Second swarms should, in all cases, have a few pounds of syrup given them, no matter how fine the weather, and full sheets of comb foundation whenever possible. Examine all second swarms, and swarmed stocks, to make sure that young queens are fertilised and laying. Second swarms must not be allowed to occupy more than four frames, to be increased to six or seven before the end of August, and when this number of combs are fully worked out, the bees will winter on them nicely. Hives raised up from their floor-boards for ventilation while the weather was hot, should have wedges removed as it becomes cooler. The same may be said of supers and sections as the season draws to a close; all surplus honey in whatever form it is being stored must be kept warm, or the bees will remove it down into the body of the hive. Second swarms require particular attention in the way of keeping them warm and cosy. It greatly facilitates comb-building when the bees are not very numerous, if the entrance is reduced to about 1 inch, and a board is kept firmly pressed down by weights over the quilts, provision being made for feeding regularly. Contrast the amount of work done in eight or ten days by a small lot of bees well treated and cared for, with the result given by the same number of bees put into a great cold hive with a couple of thicknesses of carpet thrown loosely on the entrance, left open full width, and the poor unfed bees left to take their chance.

ATTRACTIVE GUIDE-BOOKS.—Two handbooks, well written and attractively illustrated, have been issued by Messrs. BECHINGS, Strand. One of these is the *Daily Mail Guide to London*, and likely to prove useful to country cousins; the other is one of a series of illustrated homeland handbooks, and tells us of the beauties of Tunbridge Wells of to-day. It can be procured at the offices in the last-named town, as well as from the London publishers.

EDITORIAL NOTICES.

Fruit Crops of the Year.—The Report of the Fruit Crops will appear in our issue for July 31, and will be followed by remarks upon the same, running through several issues.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	JULY 24	Royal Botanic Society, Meeting.
TUESDAY,	JULY 27	Royal Horticultural Society's Committee. Tibshelf Horticultural and Rose Show.
WEDNESDAY,	JULY 28	Chester Horticultural Show (2 days). Carnation and Picotee Show at Edgbaston Gardens, Birmingham (2 days).
SALE.		
FRIDAY,	JULY 30	Imported and Established Orchids at Protheroe & Morris' Rooms 67 & 68, Chancery Lane, E.C.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick. —63° 3'.

ACTUAL TEMPERATURES:—

LONDON.—July 21: Max., 73°; Min., 59°.

PROVINCIAL.—July 21 (6 P.M.): Max., 67°, at York Min., 56°, at Shields.

THE meeting at Chiswick on the 14th inst., briefly alluded to in our last number, was a memorable one. It was a happy idea, and graciously carried out. The objects were to get the several committees together to inspect the gardens, and to give the council an opportunity of publicly thanking those fellows who do so much work for the Society without fee or reward, and with the sole object of supporting and aiding the Society in its duty of promoting the interests of horticulture. This object was felicitously alluded to at the luncheon by the PRESIDENT, who was warm in his appreciation of the labours of the committees. Rarely, if ever, have we seen "horticulture" better represented in its diverse aspects than at this meeting. Indeed, it very rarely happens that an opportunity is offered for a joint meeting of all the committees, but it was effected very satisfactorily on this occasion. The weather has not been propitious to out-door gardening at Chiswick this summer, but there was ample reason to congratulate Mr. WRIGHT and his staff on the generally excellent condition of the garden.

After the luncheon, the united committees met again under the presidency of Sir TREVOR LAWRENCE to discuss the question of the "better utilisation of the Society's gardens at Chiswick." The discussion was opened by Dr. MASTERS, who, in the first place, expressed the thanks of the committees to the Council for this valued opportunity of meeting in these time-honoured gardens. The past history, so glorious in the annals of horticulture, and illuminated by the work of SABINE, of LINDLEY, of DOUGLAS, of HARTWEG, of ROBERT THOMPSON, of GORDON, and latterly in particular, of BARRON, and others, was only lightly touched on, as the present conditions are so

different, that but little practical advantage could now be attained by attempting to imitate them. As for the present state of affairs, the Fellows had now an opportunity of judging for themselves; but it is questionable whether horticulture derives all the advantages from a garden directed by a Society, which has a scientific as well as a practical aspect, that it ought to do. This led the speaker to allude to Chiswick in its educational and its instructional aspects, leaving the more strictly practical details to the care of those more competent than himself. It was urged that the Chiswick garden should afford, so far as circumstances would allow, a complete object-lesson in which the visitors should be able to see gathered together in appropriate order, types of the best and most suitable varieties of fruits and vegetables, cultivated in the best possible manner. Chiswick would thus fill the place of a book of reference available to all classes of horticulturists. Comparative trials should be continued as now, and experiments made to test the value of manures, and various cultural methods, especially spraying.

Alluding to the instructional aspect of Chiswick, the speaker mentioned the horticultural schools of the continent, and especially the fifty experimental stations scattered through the United States. Concerning these, letters were read from Professor BAILEY and Professor WAUGH, showing the nature of the work done at these stations, and the great benefit they conferred on the horticulturist, and especially on the pomologist. The writers advocated the expediency of sending a competent pomologist to the States to observe and take note of the immense strides that branch of horticulture is making, owing to the association of scientific training with practical work.

"If," continued the speaker, "we cannot at present have a completely equipped school of horticulture, could not some arrangement be made whereby the Chiswick students might have the opportunity of attending the lectures given with so much advantage at Kew, whilst the Kew students in return might be allowed to avail themselves of the resources of Chiswick in obtaining a knowledge of practical fruit and vegetable culture? If Government aid could not be expected for these purposes, surely the resources of the county councils might be relied on to carry out educational and instructional work at Chiswick."

Sir JOSEPH HOOKER, the former Director of Kew, whose presence was hailed with the liveliest gratification, alluded to the great difference between the United States, where horticulture and horticultural education were "creations," and Great Britain, where they were the results of gradual evolution and growth. Sir JOSEPH alluded to the value of scientific training in horticulture, and to the success attending the Kew lectures. These, it appears, were not at first to the taste of the students themselves, who petitioned the Director that they might receive instruction in the formation of ribbon-borders! Alluding to DOUGLAS, and the magnificent services he rendered to the garden and to horticulture generally, Sir JOSEPH narrated how he was not only indebted to DOUGLAS for botanical teaching, but for instruction in fishing, and once, when so engaged, a slip into the water occurred, and had it not been for the ready aid of DOUGLAS, he (Sir JOSEPH) might not have been addressing the meeting at the present time.

The discussion was continued by Sir TREVOR LAWRENCE, Dr. PLOWRIGHT, Dr. RUSSELL, and

Mr. HARRY VEITCH, the last-named gentleman pointing out that in his opinion the Chiswick garden was too small, and its atmosphere too vitiated, to be utilised as an experiment station.

Dr. PLOWRIGHT concurred with Dr. MASTERS, that experiments on spraying should be conducted at Chiswick, so as to ascertain when and how it might be judiciously applied. He observed that in a vitiated atmosphere, where sulphur was largely present, fungoid attacks were almost absent, and so Chiswick was, in one respect, in a good position. Dusting with sulphur, burning affected plants, Bordeaux Mixture, and sulphide of potassium, had in turn been asserted as cures for fungus attacks, but it was only by practical experience that the value of either could be obtained, and Chiswick was the place where experiments for such discovery could well be conducted.

The Rev. W. WILKS read letters from M. H. de VILMORIN and Mr. MALCOLM DURN, both gentlemen expressing the hope that, whatever was done at Chiswick, its value as a trial-ground for varieties of vegetables, fruits, and flowers should in no way be impaired; for they considered no such independent trials as here conducted were possible elsewhere, and the decisions of the various committees were looked up to by the majority of horticulturists.

Sir TREVOR LAWRENCE proposed a vote of thanks to Dr. MASTERS, and said in effect that the whole question resolved itself into a monetary one. He had not much hope that the county councils would help them; and as for the Government, it would willingly give a million pounds for an ironclad, but would laugh at an application for £1000 to advance scientific and practical horticulture. Dr. RUSSELL seconded the motion, and it was unanimously carried.

CUPRESSUS MACROCARPA. (THE MONTEREY CYPRESS).—The photographs (figs. 17, 18) give a very good idea of the habit and picturesque aspect of Cupressus macrocarpa growing in its natural habitat on the Monterey peninsula, on the Pacific coast of California. They have been forwarded to us by Mr. THOMAS LEE, Superintendent of Gardens and Grounds, Hotel del Monte, Monterey, who, in referring to them, says:—"The photographs illustrate the great variety of habit and the picturesque appearance of the Cypress (C. macrocarpa) growing in its native wilds, and show some of the more attractive 'bits' of the famed Cypress Grove, through which runs the favourite 'Eighteen-mile Drive' round the peninsula. The Grove lies along the south coast of the peninsula, from Pebble Beach to Point Cypress, a distance of about 3 miles, and extends to a considerable distance inland. The coast rises into high bluffs at the Point, but even there the Cypress grows, and holds its own with its roots clinging firmly to the rocks, in the teeth of the full sweep of the salt-laden blast from the Pacific Ocean; their stems gnarled and twisted, and tops much bent and flattened, no doubt, but still maintaining their health and vigour to a good old age. In the shelter further inland, the Cypress assumes the stature of a small tree, with a straight stem of considerable height and thickness—a girth of 12 feet, at 5 feet up, being not uncommon. The Cypress Grove is almost pure Cupressus macrocarpa, but beyond its limits the Cypress is generally found mixed with Pines—of which Pinus insignis is the chief species—Oaks, Buckeyes (Pavias), Maples, and other deciduous trees."

NATIONAL CHRYSANTHEMUM SOCIETY.—The annual outing of the members of this Society took place on the 19th inst., a large party of the members proceeding to Henley by rail, and then going by water to Greenlands, Henley-on-Thames, the residence of the Hon. W. F. D. SMITH, M.P. After visiting the gardens and pleasure-grounds, the company dined in a spacious tent, under the presidency Mr. T. W. SANDERS, the chairman of the committee.



FIG. 17.—CUPRESSUS MACROCARPA IN THE WILD STATE. (SEE P. 52.)



FIG. 18.—VIEW IN THE CYPRESS DRIVE, MONTEREY PENINSULA. (SEE P. 52.)

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Skinners' Company and the Merchant Taylors' Company have each contributed the sum of £10 10s. to the funds of the Gardeners' Royal Benevolent Institution.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Royal Horticultural Society Committees takes place on Tuesday, July 27, in the Drill Hall, James' Street, Victoria Street, at 12 o'clock. At this meeting a Silver Flora Medal is offered for competition (amateurs) for the best collection of Cactaceous plants. At 3 P.M., Mr. W. D. DRURY will give a paper on "Familiar Garden Insects, Friends and Foes."

CHESTER HORTICULTURAL SHOW AND FÊTE.—The programme of the second annual Chester Horticultural Show and Fête, so successfully inaugurated on the Roodie last summer, is now complete, and details will be found in our advertising columns. The exhibition is fixed for Wednesday and Thursday, the 28th and 29th inst., and everything points to success. Some idea of the comprehensive nature of the prize list may be formed from the fact that the substantial sum of over £500 is devoted to the awards, and keen competition is anticipated from noted exhibitors all over the country in flowers, plants, fruits, honey, &c. Mr. F. A. WALKER-JONES, Grosvenor Chambers, Newgate Street, Chester, is the secretary.

HORTICULTURAL CLUB.—An excursion of the club will take place on Wednesday, 28th inst., the following are the arrangements:—The members of the party will leave Moorgate Street 10.24 A.M., St. Pancras 10.45, both joining at Kentish Town at 10.49, where there will be two saloon carriages. Arriving at St. Albans 11.35, brakes will be in readiness there, and after visiting the abbey the party will drive to Childwickbury, the seat of Sir BLUNDELL MAPLE, Bart., M.P., who has invited them to luncheon. They will afterwards drive to Aldenham, the seat of Lord ALDENHAM. Tea will be provided, and the party will return from Elstree Station to London.

VEITCH MEMORIAL TRUSTEES.—Mr. JOHN BENNETT-POE, of 29, Ashley Place, S.W., and Mr. OWEN THOMAS, of the Royal Gardens, Frogmore, have accepted the vacant places in the Trust caused by the deaths of Mr. WILLIAM THOMSON and Dr. ROBERT HOGG.

THE NORWICH ROSE SHOW.—Mr. ED. MAWLEY obliges us with the following particulars:—The northern exhibition of the National Rose Society, which was held on the 15th inst. in conjunction with the Norfolk and Norwich Horticultural Society, was a most successful one. The total number of exhibition-Roses staged in the joint show, amounted to 3590, which is 500 more than the average for the previous five northern shows, and greater than at any similar exhibition of the Society, with the exception of those held at Birmingham in 1890, at Chester in 1892, and at Derby in 1895. There were in all fifty exhibitors and 220 exhibits. Arranging the latter according to the number contributed by each county, they are as follows:—Norfolk 55 exhibits, Essex 46, Herts 32, Suffolk 23, Notts 15, Oxford 9, Surrey 8, Derby 7, Worcester 7, Cambridge 4, Yorkshire 4, Leicester 3, and Middlesex 3. Nearly 7000 persons visited the show, which is a record attendance for a summer exhibition of the local Society." (See also p. 53.)

SUDBURY, WEMBLEY, AND ALPERTON HORTICULTURAL SOCIETY: July 17.—The annual exhibition was held on the above date in the grounds of Fair View, the residence of F. LEETE, Esq. The show was most successful, with the exception that it was rather early for some of the vegetables.

SHIRLEY AND DISTRICT GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.—The monthly meeting of this Association was held on Monday, the 19th inst., in the Parish-Room, Shirley, Southampton, Mr. E. LADHAMS in the chair.

Roses were shown in some quantity, but owing to the heat of the past week or two the blooms were not of much merit. The best twelve blooms and the best Rose in the show were staged by Mr. J. HALLETT, gardener to the Rev. W. G. RUDGE. Mr. ROGERS, Red Lodge Nursery, and Mr. B. LADHAMS, Shirley Nursery, sent collections of Roses; the latter showing likewise herbaceous perennials as cut flowers. A discussion on the exhibits took place towards the end of the day.

TREE-PLANTING IN RHODESIA.—Jubilee Day was observed as a great tree-planting day in honour of the Queen. But the distinctive feature of the celebration was that each white man who planted a tree had himself to dig the hole for it, 3 feet in diameter and 3 feet deep. The planter was allowed to obtain the help of a friend in this task, but the essence of the celebration was that the hole should be made by the white planter himself. He was not allowed to hire a native to do the work for him. This labour was regarded as "a voluntary act of individual homage to the Queen." The Administrator, Lord GREY, himself set the example, and the natives on Jubilee Day saw a strange sight—white men voluntarily doing what they contemptuously call "Kaffir work" in honour of the Great White Queen over the water. *Daily News.*

HAMMERSMITH HORTICULTURAL SOCIETY.—The 13th annual exhibition of this Society, held on the 15th inst., was made the occasion for a little much-needed enterprise on removing the *locale* of the show from St. Peter's schools to the Grove, Hammersmith. In the amateurs' division for a group of plants arranged for effect, the leading prizes were taken with meritorious displays by Mes-srs. WOODHOUSE and BROMLEY, and from the gardens of Merton Lodge, Chiswick (Mrs. Lloyd), were several noteworthy prize contributions. One of the features of the show was the non-competitive element—good groups of foliage and flowering plants being sent by Mr. J. GIBSON, gr. to E. H. WATTS, Esq., Chiswick; Mr. WEST, gr. to Mrs. BRANDON, Oakbrook, and Mr. J. J. Hillier.

THE CHANOUSIA ALPINE GARDEN.—The Alpine Botanic Garden of the Chanousia, mentioned in our issue for June 26, is at an elevation of nearly 7,000 feet; is a quarter of a mile from the French frontier, on Italian territory, and close to the Hospices of the Little St. Bernard. It is proposed to include in it all plants from the Piedmont and Cenisian Alps. The Jardin Alpin d'Acclimatation of Geneva has contributed 600 species of plants to the garden, where it is hoped that they will do well under the sunshine of the Italian Alps. The inauguration of the garden will take place on the 2nd (not 1st as previously stated in error) of August next.

BOTANIC GARDEN OF RIO DE JANEIRO.—From the Botanic Garden of Rio de Janeiro comes a Report, by Señor J. BARBOSA RODRIGUES, of new plants under cultivation at this institution. These include *Passiflora paraybensis*, *Posoqueria calantha*, *Aristolochia echinata*, *Aecrocomia Mokayayba*, *Scheelea osmantha*, *Orbignya speciosa*, *Pindarea* and *concinna* and *fastuosa*. All these plants are described and classified carefully, and illustrated by clear and useful plates. In acknowledging his indebtedness to the monographs of *Passifloraceae* (and *Aristolochiaceae*) the author has omitted the final s from the name of his authority.

ISLE OF WIGHT.—On Wednesday, July 14, over fifty members of the Isle of Wight Horticultural Improvement Association visited Brooke House and Gardens, the residence of Sir CHAS. SEELY, Bart., President of the Society. Led by the President, the party inspected the park, the miniature lakes, cascades, rosaries, terraces, and a large Oak, which was planted by GARIBALDI in 1864. Then a tour of the extensive hot-houses was made. The Peach-houses contain 3000 square feet of glass. Stove, Orchid and green-houses, and vineries were all in good condition. The crops of hardy fruits at Brooke are below the average; but the kitchen garden crops, with the exception of a few rows of Potatoes which were afflicted by disease, were very promising.

THE GARDEN GUINEA.—The Grand Junction Waterworks Co. has gained its cause in the appeal case on the test action recently brought to discover if that body had authority to charge on the entire assessment of houses and grounds, and to impose an extra guinea on the garden for watering purposes. Mr. DAVIES, the respondent in the above case, was the owner and occupier of premises in Grange Road, Ealing, consisting of a dwelling-house and of a garden, greenhouse, and tool-shed, forming part of the curtilage of the house. The water company's charges were regulated upon an assessment of the entire property, whereas the respondent suggested that the garden formed no part of "the tenement supplied with water," and that the assessment of it as of premises which might be entirely separated from the dwelling-house, should be excluded. Mr. Justice HAWKINS found that the whole of the curtilage of the house formed the residential tenement supplied with water, and gave judgment accordingly, leave to appeal being refused.

"OUR LADY OF THE SNOWS."—Our Canadian brethren seem rather unnecessarily to resent the epithet applied to their northern land by RUDYARD KIPLING. We have had too many evidences of the superb quality of her products not to know that Canada is not always wrapped in snow. In the current number of the *Canadian Horticulturist*, Mr. KIPLING is invited "to bring his summer clothes and see our splendid weather." A great many of our scientists and doctors are going this autumn, when no doubt they will see something of the fruits thus described:—

"Apples, Peaches, Plums, and Cherries,
With five hundred kinds of berries;
Pears, Apricots, Grapes, in this country grow.
Swaying in the balmy breeze,
Quinces, Figs, nut-bearing trees,
All are products of the Lady of the Snows."

THE VICTORIA REGIA in the Royal Botanic Society's Gardens at Regent's Park is now worthy of a visit by those who happen to be in the neighbourhood, and have not previously seen this fine Lily. A few days since the plant had ten fairly large leaves and several flowers opening.

THE CONSUMPTION OF FRUITS AND VEGETABLES IN MANCHESTER.—How a great city is fed forms the subject of the opening paper of the *Journal of the Royal Agricultural Society*, in which Mr. BEAR deals with "The Food Supply of Manchester," where the Royal Agricultural Society held its annual meeting last month. Vegetable produce alone is dealt with on this occasion. New Potatoes appear to be in supply practically all the year round, the first arrivals being from the Canary Isles and France at Christmas time. The counties of Chester, Cambridge, and Bedford are among the chief sources of home supply. In the first three months of the year large quantities of Broccoli are received from Cornwall, often as much as 200 tons a day. Supplies from the Midlands follow, and Holland likewise sends large quantities. Cabbages arrive first from Evesham, then from around London, and later from Lincolnshire and Cheshire. Several Manchester salesmen who have entered into market-garden operations at Evesham, at Torrington (Norfolk), and at Swineshead (Lincolnshire) are said to have realized as much as £100 per acre for their Cabbages. Early Green Peas come from Algeria, Spain, and France, followed by supplies from Evesham, Nottinghamshire, and Yorkshire. The Channel Islands send the earliest French Beans. Celery is largely grown locally, and is in the market from July to April. France, Spain, and Italy send early Asparagus, whilst the greatest source of the home supply is the Evesham district. Mushrooms are in great demand, and come mainly from Kent, the districts around London, and other parts of the South of England. The home supplies of Onions—chiefly from Bedfordshire—are being forced out by foreign importations; last year 91,000 cases of Valencia Onions, and 25,000 bags from Egypt, were conveyed into Manchester by the Ship Canal alone. Cucumbers, Lettuces, Radishes, and other kinds of salad are extensively grown in the

neighbourhood; whilst Watercress is sent mainly from the counties of Oxford and Bucks. Much forced Rhubarb is sent from the Leeds district, the unforced supplies being grown mostly within carting distance of Manchester. There is no better market in England for Damsons, the supplies being obtained chiefly from Worcestershire, Shropshire, Cheshire, Lancashire, Derbyshire, and Wales. Of Strawberries, the Brest district of France is the main source of the early supply, from 8000 to 10,000 boxes per day being sometimes received. Cornwall, Southampton, and Swanley, follow in succession, as many as 300 tons a day having been known to arrive from the last-named district. Kentish fruit, picked early in the morning, arrives in Manchester in the afternoon of the same day. There is a great trade in Bilberries, 10,000 baskets of 8 lb. each having arrived in the market in one day last year; they mostly come from Germany, whilst Worcestershire, Wales, and Ireland, send the bulk of the home supply.

is concerned, the first Pompon was Little Wonder, raised at Handsworth, near Birmingham; and that this type is of home rather than German origin, as stated in our article. Messrs. POPE & SONS fail to supply any date when the variety, Little Wonder, was raised. We have it on the authority of the late Mr. SHIRLEY HIBBERD, who devoted a great deal of attention to the history and development of the Dahlia, that the origin of the Pompon type dates from about 1808, when HARTWEG of Karlsruhe obtained a double variety from the single Dahlia coccinea (orange-red). "The Dahlia was received in 1789 by Cavanilles of Madrid, from Mexico, and in several forms, to three of which he gave specific names. Then, in 1803, A. VON HUMBOLDT sent fresh seeds of these forms from Mexico to France, and from Paris the Dahlia got generally distributed. *D. coccinea*, with two others, viz, *D. pinnata* and *D. sphondyliifolia*, were the three original types, the first-named being the shortest in stature, and the most tender. For a

the end of the fifties, all of very tall growth. Since 1880 quite dwarf growing varieties have been originated, and thanks to the efforts of Messrs. TURNER KYNES & Co., J. T. WEST, CHEAL & SONS, and others, the Pompon Dahlias have been greatly improved and extended, and are now most valuable for exhibition, border, and cutting purposes. As further showing that the recognition of the Pompon Dahlia as a distinct, useful type, is a matter of comparatively recent occurrence, it may be mentioned that during the time the National Floricultural Society was in existence—from April, 1851, to the end of 1858—there is no record of Pompon Dahlias having been exhibited at any one of the meetings; and so far as the published awards of the Floral Committee of the Royal Horticultural Society show, no certificate was given to a Pompon Dahlia until 1875.

HOME CORRESPONDENCE.

AN ARTISTIC BLEND CONVERTED INTO PRACTICE.—Referring to this subject in a recent issue, the combination of Lily of the Valley and Woodruff is very familiar to me from my own practice of it a generation since, and it is a very lasting ornament when grown unexposed to sun after 11 or 12 o'clock. The scent of the Woodruff is manifest in its surroundings as in so many other plants in flower, principally near sunset. The high aroma of the herbage is conspicuous at all times on rubbing a few leaves between the palms of the hand, which retain the aroma for hours. It is this herb which is popularly used in Germany for "*maitrunk*." As hock, which is required for this tasty and refreshing beverage (with a moderate amount of sugar added, and a small handful of the herb per quart or according to taste, and left in the wine for nearly an hour before drinking the beverage), may seem costly in this country, I strongly recommend as a substitute a quart bottle of good sparkling cider, which will assume all the properties for which *maitrunk* is esteemed if similarly treated, with the omission of sugar, as cider has not the acidity of hock, and it will be found a delightful beverage in spring and early summer, or as long as the herb retains the aroma in the milder form, viz., in its young state. The combination might perchance contribute to render cider the popular drink towards which achievement so many efforts are being made. *H. H. Raschere, Forest Hill.*

A NOBLE SCOTCH FIR.—I have a vivid recollection of a visit paid in company with several fellow gardeners, some twenty-seven years ago, to a very fine Scotch Fir, which then and still stands in a small wood close to the road leading from Romsey to Southampton, and in a corner of the Broadlands estate. Being recently in that locality, I went a little out of my way to see this fine tree once more. Since previously seen, it seemed to have altered nothing, not a branch having been lost, although in all directions about the district trees had been thrown by a previous hurricane in considerable numbers. Having a tape with me, I was enabled to measure the stem 4 feet from the ground, and found it to be exactly 13 feet, thus giving a diameter of 4 feet 4 inches. When measured twenty-seven years previously at the same height, the circumference was just over 12½ feet, so that apparently not much expansion had taken place during that long period. Judged by that ratio of growth, the tree might be several hundreds of years old. The stem is singularly clean and handsome; it is as round and bright as a ship's mast, and runs 30 to 40 feet in height ere it divides, then goes to a considerable height, being capped by a fine round head. For a Scotch Fir, I regard this as a wonderful as well as a very noble tree, and well merits notice and preservation. The Selborne Society might well devote some of its energies to the cataloguing, preserving, and describing the grand old trees of the kingdom. Would that every one of these vegetable monarchs could have a plate affixed, giving name, probable age, dimensions, &c. I have no doubt there are finer Scotch Firs in their native habitat, but this one is, I think, a record example for the South of England. *A. D.*

WASPS AND ROSES.—I am interested in Mr. G. Paul's note upon the above in your issue for July 17. In 1893 we had a perfect plague of wasps, and it was during that summer that I first noticed them eating Roses; not merely the Rose leaves, but blossoms and hard buds as well. At first I imagined they were in



PORTRAIT OF ANDRÉ LENOTRE. (SEE P. 45.)

The trade in Tomatoes, although of quite recent origin, is already immense, and there are firms which dispose of 600 to 1200 packages of 12 lb. to 15 lb. in a day when business is in full activity. The home supply is gaining ground upon that from Jersey and Guernsey; and yet from the beginning of May until late in the autumn the supply from the Channel Islands is so large that two or three railway companies give a special daily service to Manchester. Much useful information is given on freight charges, and on the expenses of large and small producers respectively. The general conclusion arrived at is, that market-gardening and fruit-growing appear to be still fairly remunerative industries when even moderately well managed, and highly profitable when conducted by men of special energy and keen business capacity. Manchester, moreover, is one of the best markets in the world for the distribution of vegetables and fruit. *Times, July 20.*

THE ORIGIN OF THE POMPON DAHLIA.—Messrs. POPE & SONS, nurserymen of Birmingham, write in reference to our article upon plants of the Victorian Era, that a belief exists in their neighbourhood that, so far as the Pompon Dahlia

long time the plant remained sterile. From the crossing of these three types have originated the Dahlia variabilis of the present day in its unending varieties." (*Pflanzen-Mischlinge*, by WILHELM OLBER FOCKE, p. 197.) This new type appears to have "caught on" in Germany, as the fanciers of the Dahlia there favoured the small flowers, which obtained the name of Lilliputians, on account of the small size of their blossoms. It also appears to be quite certain they were originally known in this country as German Dahlias, thus proclaiming the country in which the type originated. As an illustration of the fact that the popularity of the Pompon Dahlia dates from a comparatively recent period, it may be stated that at the first National Dahlia Show, held in St. James' Hall, London, in 1858, Pompon Dahlias were not invited, though the dwarf bedding varieties of that date were. Up to 1833, the term Pompon appears not to have been recognised, as when mentioned by writers in the floricultural publications they were known as Lilliputian or Bouquet Dahlias, and they were only just beginning to attract attention; but it was not until the seventies that the type was more largely recognised. We remember the varieties in cultivation at

search of insects, or at least the sweet juicy exudations from an injured bloom or leaf. But it was not so, for in several instances plants that were perfectly free from such were seriously attacked. I may give one instance in particular. At the end of a long Rose-house were two plants of Marie Van Houtte on the outside wall, and well in bud and blossom. Suddenly the wasps took to eating these, and in the course of a few hours had quite ruined the trees for that season. They were most persistent in the attack, and syringing only irritated, without completely stopping them. Whether in the bud or full blown, every flower-bud was soon demolished. Nor did they seize a portion and fly off with it, as we frequently notice when they are collecting food for their larvae; in this case they positively fought for possession, and stayed eating until driven away by a stronger or more eager wasp. Less than half-a-dozen yards off there were heaps of fruit, and for a time this was comparatively neglected, a change to Rose diet being evidently the inducement. Since then I have more than once seen wasps feeding, and also nipping off portions of Rose bloom and leaf, as described by your correspondent. In the latter case I have little doubt the chief object is the manufacture of paper-like substance for building the nests, having traced them direct to their nesting-place when near. I have also seen them particularly busy in the same way with other foliage, but never more so than upon the Alder by river sides. In each case I have failed to find any insect or other food; and as soon as a piece was properly severed and packed, as it were, the wasp made straight for some given point. *A. Piper.*

WHITE LILIES AND OTHERS.—We have *Lilium candidum* (type) and *L. candidum* var. *Sultan Zambach* in flower together now. *L. candidum* varies a good deal more than is generally supposed, hence possibly its erratic growth at Straffan. *L. candidum* type has branching spikes, strong and vigorous; while *Sultan Zambach* is nearly killed off by the Lily fungus. At Newry, *L. candidum* var. *speciosum*, with chocolate-purple coloured stems, 7 feet high, is very distinct, and makes luxuriant growth. We have here also *L. candidum* fl.-pl., so called (all bracts), and *L. candidum* striatum, with purplish streaks on the perianth-lobes. We have also now in bloom one, if not two, varieties of *L. Martagon* fl.-pl., an old double Lily not now often met with. *Mariac's Water Lilies* are rampant and flowery here now; our pond is so full of them that we cannot get our little punt through the masses of leaves and flowers. What a glorious gain these *Nymphæas* are! *P. W. Burbidge.*

FROST IN JULY.—I have noticed the remarks in the *Gardeners' Chronicle* of last week on a frost in July, and as I happen to have a grass thermometer, and keep a record of the temperature, it may be interesting to your readers if I give the readings for the last ten days. I have kept a register for more than fifteen years, and most of that time in the highlands of Scotland, and have never registered so low a ground temperature before. I will take the ten days dating from July 7, and give the minimum in a Stevenson's box, and on the grass, viz.:—

1897.	Min.	On grass.	1897.	Min.	On grass.
July 7	48°	31°	July 12	48°	30°
" 8	41°	23°	" 13	48°	34°
" 9	54°	37°	" 14	51°	32°
" 10	55°	35°	" 15	49°	28°
" 11	45°	28°	" 16	52°	32°

The sky on these nights was very clear, and the wind came mostly from the north-east. *John Killey, Warwick.*

NARCISSUS BERNARDI.—The question is often asked—Does it do any harm to Daffodils to keep them out of the ground for a few weeks? My reply is, it depends on the kind. Those which have bulbs of a loose texture—which may be tested by pressing the bulb between the finger and thumb—should be replanted soon after being dug up. *Narcissus Bernardi*—a name given to the wild hybrids of *N. poeticus* and *N. pseudo-Narcissus*—generally has bulbs of a very loose texture. If these are kept too dry when out of the ground, they are liable to dry up till they are all husk; if too damp, they often rot. I have in former years lost many from one or other of these causes; so, never keep them long out of the ground when dug up for division. *C. W. Dod, Edge Hall, Malpas.*

THE LATE JOHN FINLAY.—I notice with regret the death of this excellent gardener and naturalist in your issue of the 17th inst., and should be pleased if you will allow me to correct a slight mistake that appears in the Obituary notice. John Finlay began his gardening career in the garden of Netherwitton Hall

in 1858, he being then about 22 years of age. I was collecting native plants at that time, and he joined me in the hobby. We collected all round Netherwitton, and as far as Sunday rambling would permit. The specimens were dried, I remember, on the top of the old boiler-furnace, a rough-and-ready method, but the drying was very successful; they were then, in the winter evenings, mounted, named, and classified on paper procured from Edinburgh for the purpose. It was I who gave him instructions in naming and classifying from Hooker and Arnott's *British Flora*—a book that I have still. I left Netherwitton in the autumn of 1859, and he shortly afterwards, to go to Mitford Hall, and since that time I only saw him once, in 1860. I am astonished at the extent of his collections. *R. Gray, Convent Cottage, Carisbrooke, Isle of Wight.*

AZOLLA FILICULOIDES.—This exquisite little aquatic cryptogam is again most luxuriant, and is fruiting very freely in an open-air tank in the Botanical Gardens of Trinity College, Dublin. It is very beautiful in the early morning, when its flat fronds are thick set with drops of water or dewdrops, that glisten and sparkle like so many diamonds in the sunshine. Apart from its botanical interest, the plant is very pretty as seen floating in tanks, or shallow rock-pools of water in the Alpine gardens; or it may readily be grown in a pan or tub of muddy water anywhere. A supply is available, and will be sent to any botanist or botanical garden from whom or which a stamped and addressed address-label is received. *P. W. Burbidge.*

NURSERY NOTES.

REDBRAES NURSERIES, EDINBURGH.

HERE, on part of the old site of Messrs. Dicksons & Co.'s nursery, where for many years Mr. James Grieve was so well known and universally respected as manager, I found this veteran horticulturist and his two sons establishing his new business. The old firm, while retaining its seed shop at Waterloo Place, has met the fate of so many London and other great city nurserymen, that of being forced further out of town in search of more room, the builder treading closely on the heels of the cultivators. A considerable area is, however, still under cultivation, every inch of which out-of-doors and under glass, being packed full of nursery stock of all sorts in the most robust health and cleanly condition.

Of the twelve or more large glasshouses, six of the prominent are devoted to Tomatoes, cultivated on the latest and most approved principles, and hastening into fruit in succession throughout the summer. Like other successful growers of fine fruit, Mr. Grieve assured us that he has never any difficulty in disposing of his produce. Should he grow 50 tons, the demand would rise to 100; 100 tons, he should probably be asked for 200. The demand seems insatiable, and the prices for the best produce are well maintained.

Mr. Grieve's favourite varieties are *Conference*, *Sutton's Al*, *Comet*, *Stirling Castle*, *Austin's Eclipse*, and two new American varieties of great promise, *Honor Bright* and *Dominion Day*. As the Tomatoes are cleared out of these roomy houses the *Chrysanthemums* and bedding-plants are taken in, until every inch of space is once more filled with profitable autumn and winter crops. Three or more houses are devoted to *Ferns*, in which the more useful *Pteris*, *Asplenium*, *Adiantum*, of all the most popular and useful varieties and sizes for decorative and cultural purposes. *Pteris cristata*, *P. cretica*, *P. Wimsetti*, *P. tremula*, *P. serrulata*, *P. nobilis*, *Asplenium nobile*, *bulbiferum*, *biforme*, *pumilum*, *laxum*, *Adiantum* or *Maidenhair Ferns*, such as *A. cuneatum*, *Williamsii*, *gracillimum*, *Capillus veneris*, *Farleyense*, &c., abounded in all directions. A fine stock of *Cyrtomium falcatum* and the equally useful *Nephrolepis Phillipinensis*, and a good collection of *Selaginellas* were in these three well-stored Fern-houses. Table-plants in the form of the most chaste and suitable *Palms*, *Dracenas*, *Ficus elastica*, *Aracaria excelsa*, *Aralia Sieboldii*, *Aspidistra*, &c. Almost an entire house is devoted to the now indispensable *Smilax*, now as essential for the light and graceful finish of floral decorations as the Tomato is for food. Large quan-

tities of *Asparagus plumosus* are also grown. Other houses are filled with tricolor, silver, bronze, and other bedding and greenhouse *Pelargoniums*, *Fuchsias*, *Begonias*, *Lilies*, and *Spiræa astilboides*. Quantities of flowers are also grown for bouquet-work and house and table decorations. Several pits are devoted to the propagation of *Conifers*, *Ampelopsis*, and other trees and shrubs, which seem to root like weeds under the skilful manipulation and management of the head of the firm. A frame is also well packed with a choice collection of hardy herbaceous plants in pots. We also noticed a good collection, including almost all the old favourites, in herbaceous beds, and long borders in the open. Also large beds of seedling and named *Carnations*, *Pinks*, *Pentstemons*, choice *Antirrhinums*, *Delphiniums*, *Lupinus*, *Phloxes*, &c. A large space is devoted to the growth of *Dahlias*, *Asters*, *Stocks*, and show and other varieties of *Pinks*, and *Carnations*, throughout the summer and autumn. Special attention is given to the raising of spring flowers, such as *Wallflowers*, *Aubrietias*, *Alyssum*, *Arabia*, *Myosotis*, *Polyanthus*, *Auriculas*, *Sweet Peas*, in choice collection for cutting; *Mignonette*, *Pyrethrums*, and the new and beautiful *Marguerite Princess May*, which is grown in quantity. Hardy trees and shrubs receive special attention, such as *Conifers*, *Hollies*, *Laurels*, *Skimmias*, hybrid *Rhododendrons*, *Olearia Hawati*, &c. We also noticed a very complete collection of the New Zealand hardy *Veronicas*, numbering some thirty species or varieties. We noted among them *Veronica glauca*, *V. coerulesa*, *V. Anderssonii* var., *V. salicornioides*, &c.

A good collection of hardy climbers, such as green and golden *Ivies*, *Virginian Creepers*, *Hops*, *Honeysuckles*, and *Clematis* are kept in pots.

From Mr. Grieve's antecedents, and as the raiser of James Grieve Apple, it need hardly be said that Apples, Pears, Plums, Cherries, Gooseberries, Currants, Raspberries are duly cared for; and the leading sorts of Strawberries, the true *Garibaldi*, *Royal Sovereign*, and Mr. Carmichael's new seedlings the *Prince* and *Princess of Wales*, carefully grown for trade purposes. But though Mr. James Grieve has done good work among fruits, trees, shrubs, hardy herbaceous flowers and plants through his long and busy life, it is as a florist and as the father of the modern *Violas*, that he is best known and most highly honoured. I must therefore take leave of him and his promising business for the present amid his favourite flowers, *Pinks*, *Carnations*, *Violas*. He grows large collections of the former, as well as a big bed of seedling *Carnations* for cutting; also every garden *Viola* worth growing, and a large collection of exhibition *Violas* and *Pansies* in an extensive range of cold frames, and also planted out.

Mr. Grieve speaks highly, as well he may, of his new bronze-bedding *Viola Joseph*, with its richly suffused yellow and golden petals and deep bronze eye. Mr. Grieve kindly named the following as the best bedding sorts:—*V. Bullion*, *Archie Grant*, *The Mearns*, *Countess of Kintore*, *Countess of Hope-toun*, *True Blue*, *Wm. Niel*, *Duchess of Fife*, *White Duchess*, and *Marchioness*. *D. T. F.*

LAW NOTES.

IMPORTING FLOWERS FROM FRANCE.

THE LIABILITY OF CARRIERS.—In the Westminster County Court, recently, his Honour Judge Lumley Smith, Q.C., had before him the case of *Dezilippi v. the London, Chatham & Dover Railway*, in which the plaintiff, a dealer in flowers, carrying on business in Drury Lane, sued the defendant company to recover the sum of £19 4s., being the value of ninety-six baskets of flowers consigned to him from Nice, and which were rendered useless in consequence of delays in delivery. The plaintiff's case was that the goods were consigned to him by mail route in order to facilitate rapid delivery, but owing to the defendant having sent them by cargo-boat, they were delayed some twelve hours in delivery, and when they did arrive they were absolutely rotten, and useless for market.

The plaintiff was called, and said that the full consignment was 103 baskets, and out of that number only seven baskets were delivered in time for the market.

Mr. Groves, solicitor, appeared on behalf of the Company, and said the defence was that the goods were delayed owing to the French train arriving late at Calais. A number of witnesses were called to give evidence in support of this contention; but it transpired that the flowers were packed in the hold of the ship instead of being placed upon the deck, where they could have been easily got at upon their arrival at Dover, and the consequence was the things were not sent on to London by the 10 o'clock train, as they might otherwise have been.

His Honour said he thought the defendant, in packing the flowers in the hold of the ship, had placed them in a position of safety; but at the same time, they had so placed them that they could not be got at until they were useless. Judgment therefore would be for the plaintiff for the full amount claimed, with costs.

A DISPUTED SEED BILL.

In the Westminster County Court recently the case of Cox v. Firmin was before his Honour Judge Lumley Smith, Q.C., and was an action by the plaintiff, a seed merchant, carrying on business at Covent Garden, to recover the sum of £4, for various seeds supplied to the defendant, a gardener, carrying on business at Streatham. The defendant admitted the order and delivery of the goods, but said they were not what he ordered, and that was the reason why he objected to paying for them.

Plaintiff's representative said the goods were supplied over a year ago, and this was the first time that any suggestion had been put forward to the effect that the goods were not according to order.

His Honour said the defence was a ridiculous one, and gave judgment for the plaintiff for the full amount claimed, with costs.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

JULY 13.—Present: Dr. M. T. Masters, in the chair; Mr. Veitch, Dr. Bonavia, Rev. W. Wilks, Prof. A. H. Church, and Rev. G. Henslow, Hon. Sec.

Malformed Fungi in Mushroom Bed.—A letter was received from Mr. Taylor, Penbridge, Mold, criticising the reports sent to the last meeting with reference to the loam, as he had splendid results last year with the same loam cut from the open pasture. As the specimens have been lost in the transit to Kew, the committee has been unable to receive the report of an expert upon the fungi themselves.

Cucumber with Adherent Leaf.—A specimen was received from Mr. E. Horsley, gr. to Rev. W. Wilks. The petiole of the leaf had become fused with the base of the fruit, the result being a distortion in the latter—a not uncommon phenomenon.

Cattleya, Synanthic.—This was a fusion between two flowers, the effect being to arrest some parts of the whorls, so that each flower became dimerous. There were two lips.

Poppay with Pistiloid Stamens.—A flower of *Papaver Rhoeas* was exhibited with this peculiarity. It is rare in this species, but not infrequently in some others, as the Icelandic.

Chemical Composition of Cattleya.—Two papers prepared by Mr. Smee were laid before the committee by Mr. Veitch, to whom they had been addressed, as Chairman of the Orchid Committee. The first contained some figures connected with the composition of the atmosphere; analyses of old and young pseudo-bulbs were also given, and of the flower, including observations upon the colouring matters of plants. Professor A. Church, having given careful consideration to the first of the two papers, reserving the second for a future meeting, remarked that Mr. Smee had scarcely paid sufficient attention to the more recent analyses of the atmosphere and of rain; the amount of CO₂ in the free air over land and sea being now found to be almost absolutely uniform everywhere (except where locally contaminated), and less in quantity than 3 parts in 10,000, so that no conclusions could be drawn from the data furnished in the paper on this point. With regard to the amount of ammonia in the air, it is so infinitesimally small in quantity, that it can only be estimated by the most modern and refined chemical operations, so that he was obliged to express some hesitation in accepting Mr. Smee's statements on this point. With regard to Mr. Smee's analysis of pseudo-bulbs and of flowers, Prof. Church observed that they agreed fairly well with average results hitherto obtained from terrestrial and epiphytic plants, but he thought that the percentage of undetermined ash constituents—viz., about one-half, was far too great, and he questioned the presence of aluminium, observing that though

terrestrial species of *Lycopodium* contain much of this metal, epiphytic species of the same genus contain none. He felt sure that some ingredient was wanting which had not been determined. With regard to floral colouring matters, Mr. Smee did not appear to have consulted recent researches. Professor Church had proved that a number of reds, blues, and purples, though called by different names—e.g., cochin in the *Coleus*, erythrophyl in Copper Beech, fruits, &c., anilin in black Grapes and anthocyan in were absolutely the same thing, being represented by the formula C₁₅H₁₁O₆. These became purplish in neutral cells, blue in alkaline, and red in acid cells. Even the blue-green of a certain *Ixia* was due to an alkaline solution of the same substance. With regard to the Beetroot, however, and plants allied to it, as the *Amaranthus* and *Buckwheat*, he found that the red-purple was of a different nature, and he had called it "amaranthin." It gave neither a scarlet nor blue reaction, neither green nor yellow with acids, but Prof. Church had as yet not determined its actual chemical composition, although he had found it to differ from anthocyanin by its insolubility in absolute alcohol, and by the absence from its spectrum of definite absorption bands. With regard to nutritive solutions, Professor Church thought that the ordinary solutions for plant-culture containing phosphates and salts of lime should be used for *Orchids*, not the solution surcharged with nitrogen compounds recommended by Mr. Smee. He would suggest spraying with "pulverised" solutions the epiphytic *Orchids*, for he had proved with *Echeverias*—as Boussegault had also long ago with other plants—that salts if moist could be absorbed by the surface of the leaf, so that when a lithium salt was placed upon a lower leaf it was detected in others above. Dr. McNab had previously proved the transmission of lithium salts imbibed by the roots throughout the plant, following the suggestion of Prof. Church to use this salt. Mr. Veitch and Dr. Masters called attention to the practice carried out by amateur *Orchid* growers of scattering fragments of carbonate of ammonia (smelling salts), so that the vapour might be absorbed. Mr. Henslow suggested that it might be absorbed with the aid of vapour of water, as he had found by experiments that this can be absorbed by leaves.—(*Transpiration in a Saturated Atmosphere*, Journ. Linn. Soc., Bot., xliii., p. 308).

WOLVERHAMPTON FLORAL FÊTE.

JULY 13, 14, 15.—This fine exhibition loses none of its interest as the years roll on. It was held, as usual, in the spacious West Park, and, as is customary, several large tents were required to accommodate the exhibits. On this occasion, probably with a view to the convenience of the visitors in the event of rain, a covered way connected the whole of the tents, and so access could be had to all without any necessity for going out in the open air. The day was gloriously fine, and the company large. Unfortunately, Mr. W. A. GREEN, the acting Secretary from the first, was unable to be present through illness; but his duties were very ably undertaken by Mr. ALFRED OUTRAM, who chanced to be present in the town on the opening day.

The schedule of prizes is a very lengthy one, and some of the leading features only in the exhibition can be touched upon.

Roses.—Wolverhampton always has a good show of Roses, as good prizes are offered in several classes. The flowers were probably as good as those shown at the Crystal Palace; and, despite the hot weather, the colour of many of the crimson varieties was brilliant. There were four collections of seventy-two varieties, the handsome 1st prize going to Messrs. HARKNESS & SONS, nurserymen, Bedale, their leading flowers being Madame Cusin, Duc d'Orleans, Mrs. J. Laing, Duke of Wellington, Muriel Grahame, Mrs. W. J. Grant, Queen of Queens, Marie Baumann, Marchioness of Londonderry, Cleopatra, Maman Cochet, Fisher Holmes, Madame Delville, and Her Majesty; Mr. R. B. CANT, nurseryman, Colchester, was 2nd, his leading blooms being Ernest Metz, Comte Raimbaud, Jean Supert, Madame de Watteville, Alfred Colomb, The Bride, Horace Vernet, and J. S. Mill. These may be taken as representing the best varieties shown in the various classes.

With forty-eight varieties, Mr. B. R. CANT was 1st, and Messrs. HARKNESS & SONS 2nd; and these two occupied the same positions with trebles of twenty-four varieties.

There was a class for twenty-four varieties by exhibitors not showing in the preceding classes, and here Messrs. TOWNSEND & SON, Colchester, were 1st; and Mr. J. MATTOCK, Oxford, 2nd. The best twelve new varieties of 1894-95-96 came from Mr. B. R. CANT.

The best twelve blooms of any dark-coloured Rose were of Horace Vernet from Mr. B. R. CANT; Messrs. TOWNSEND & SON coming 2nd with A. K. Williams.

The best twelve blooms of a light Rose were those of Her Majesty, from Mr. B. R. CANT; Messrs. HARKNESS & SONS were 2nd, with Mrs. J. Laing.

Mr. B. R. CANT was 1st with twelve very fine blooms of Tea Roses, and Mr. J. MATTOCK 2nd.

The most decorative arrangement of Roses was furnished by Messrs. PERKINS & SONS. It consisted of bouquets, wreaths, sprays, &c., with vases of cut blooms, and boards of the same—a charming feature, as it occupied a large space of tabling; and Mr. J. MATTOCK was 2nd. In the amateurs' classes, the leading prizes were taken by the Rev. J. H. PEMBERTON, Havering-atte-Bower.

Plants.—Very few good greenhouse plants filled a space of

many of them attracted considerable attention. Mr. J. A. CYPHER, Cheltenham, had the best sixteen, including, of flowering subjects, *Statice profusa*, *Phenocoma proflera*, *Barnesii*, *Eriosea Parmenteriana*, *ventricosa*, and *Bothwelliana*, *Bougainvillea Cypheri*, with large rich mauve-coloured bracts, and almost yellow foliage, and *B. Sanderiana*; *Stephanotis floribunda*, *Ixora Williamsii*, and gigantic examples of *Kentia Forsteriana*, *Belmoreana*, and *australis*; *Latania borbonica*, two fine *Crotons*, &c. 2nd, Mr. W. VAUGHAN, Leamington.

Groups of plants covering a space of 450 square feet were very fine, and so elaborate as to defy description. Mr. CYPHER was 1st, with probably one of the best arrangements he has yet set up. Mr. W. FINCH was 2nd, and Mr. W. VAUGHAN 3rd. The 2nd prize group was also very fine. The best group of 400 square feet came from Mr. A. CRYER, gr. to J. A. KENDRICK, Esq., Birmingham, who followed upon much the same lines as Mr. CYPHER; Mr. R. SHARPE, gr. to H. LOVATT, Esq., Busbury, was 2nd.

Mr. CYPHER was the only exhibitor of eight *Orchids*, which were below the usual quality. Collections of six *Palms* were a fine feature.

Collections of six foliaged-plants were very fine, Mr. CYPHER taking the 1st prize with capital *Kentia australis*, *Latania borbonica*, three *Crotons*, and a *Dasyliroa*. Mr. VAUGHAN was 2nd.

Mr. SHARPE had the best six exotic Ferns, which included a fine *Gleichenia Mendellii*, *Todea superba*, *Trichomanes radicans*, and three others. Mr. J. P. McDONALD, gr. to G. H. KENDRICK, Esq., Birmingham, was 2nd.

There were several classes for specimen plants in the division for gentlemen's gardeners, who made, as usual, a good display; but tuberous-rooted *Begonias* somewhat disappointed expectations. A number of classes were also set apart for amateurs and cottagers, and in these the exhibits were generally of good quality.

Cut Flowers.—The general classes for these included stove and greenhouse cut flowers, *Pansies*, *laced Pinks*, *Carnations*, &c., in all of which there were good exhibits. The best twenty-four fancy *Pansies* came from Mr. M. CAMPBELL, Blantyre. Messrs. CAMPBELL, J. NADEN, Derby, and W. PEMBERTON, Walsall, were the principal prize-takers for *Pansies*, *Carnations*, and *Pinks*.

Floral decorations including bouquets, &c. in the exhibition, at which Messrs. PERKINS & SONS, Coventry, greatly distinguished themselves, taking most of the first prizes. Mr. M. JENKINSON, Newcastle, Staffordshire, was also a successful exhibitor. Mr. HENRY ECKFORD's special prizes for Sweet Peas brought many very pretty displays.

Fruit.—With the exception of the collections of nine dishes, fruit also fell below the usual average. Mr. J. H. GOODACRE, Elvaston Castle Gardens, Derby, had the best nine dishes, staging Black Hamburg and Muscat of Alexandria Grapes; Barrington and Violette Hative Peaches; Lord Napier and Violette Hative Nectarines; Queen Pine, &c. 2nd, Mr. T. HARRIS, gr. to Lady H. SOMERSET, Eastnor, Leicestershire; and 3rd, the veteran, Mr. T. BANNERMAN, Rugeley. Grapes scarcely cut-d for special mention Peaches and Nectarines were few. Strawberries were fairly plentiful, and in other classes the more hardy fruits were staged.

Vegetables.—The valuable special prizes offered by Messrs. BURTON & SONS, JAMES CARTER & CO., WEBB & SONS, W. B. BASON, T. B. DOBBIE & CO., and others brought some very good collections, the chief honours falling to the lot of Mr. C. J. WAITE, gr. to Col. TALBOT, Esher, who was in very fine form throughout. There were many classes for vegetables, but probably the date of the show was a little too early to have midland-grown specimens in their best character.

HONORARY EXHIBITS.

Of these there were a large number. Messrs. JAMES VETCH & SONS, Chelsea, had a group of plants of great interest and beauty; Mr. J. H. WHITE, nurseryman, Worcester, a large and varied collection of cut flowers; the same from Messrs. JONES & CO., Shrewsbury, who added a number of charming effects in floral decorations; Messrs. THOMSON & SONS, nurserymen, Birmingham, had cut flowers, also in great variety, with foliaged plants; Messrs. JARMAN & CO., Chard, cut flowers, including *Roses*, vegetables, &c.; Mr. HENRY ECKFORD, Wem, Salop, had fifty bunches of Sweet Peas; Messrs. HARRIS, florists, Tottenham, Ferns, &c.; Messrs. WEBB & SONS, Wordsley, Stourbridge, specialties in vegetables, cut flowers, &c. Messrs. W. & J. BIRKENHEAD, Sale, had an extensive and varied collection of hardy Ferns. Messrs. DICKSONS (Limited), Chester, a very fine bank of imposing bunches of cut flowers, including *Roses*. Mr. E. MORRELL, Shrewsbury, made a bright display with *Roses*, &c.; Mr. H. M. STEVENS, Birmingham, staged floral decorations; Mr. R. SYDENHAM, Birmingham, had pretty arrangements in metal for holding flowers; Messrs. W. CLIBB & SON, Altrincham, foliaged plants, cut flowers and sprays of *Violas*; Messrs. BARK & SON, Cove-at Garden, a huge bank of cut flowers; Mr. W. H. JONES, honey; Messrs. W. F. GUNN & CO., Birmingham, a collection of cut flowers; the same from Messrs. HARKNESS & SONS, Bedale, who, as usual, staged very fine bunches; Messrs. DOBBIE & CO., Rothsay and Orpington, had a large variety of Sweet Peas, *Violas*, *Dahlias*, *Polargiums*; Mr. M. CAMPBELL, Blantyre, *Violas* and *Pansies*; Mr. H. DEVERILL, Banbury, a fine collection of his specialties in vegetables; Messrs. W. B. ROWE & SON, Worcester, cut *Roses*, &c.; and Mr. R. LOWE, nurseryman, Wolverhampton, an extensive assortment of plants, cut flowers, &c. The quality and variety of these honorary exhibits added very much to the interest of the show.

WISBECH AND DISTRICT HORTICULTURAL.

JULY 14.—This society, which is largely managed by working men, held their summer show in a commodious tent erected in the grounds of Selwyn Hall, the weather being fine. Certain plant and cut bloom classes are open, and although these did not attract many plant growers, they brought excellent cut Roses from Peterborough and other places, so that these flowers formed one of the leading features of the show.

A very fine stand of thirty-six varieties gained for Messrs. G. & W. BUNCH, Peterborough, the 1st prize; Mr. R. H. BATH, Nurseryman, Wisbech, being 2nd. Messrs. G. & W. BUNCH were also let with twenty-four, twelve, and six varieties, staging admirable blooms in each class, and distinct from the foregoing; Mr. R. H. BATH was in each case 2nd.

Bunches of Sweet Peas were a pretty feature, the best twelve, from Mr. F. W. HILL, represented some of Eckford's best new varieties. It is necessary in a class of this kind not only that the bunch should be confined to a certain number of sprays, but also that a bunch be confined to one variety only. Quite a small bunch might, and often does, contain blooms of the finest quality. The sprays of blossom are nearly always shown in a too crowded state; still, Sweet Peas are seen at their best when exhibited in the manner adopted by Mr. Eckford. Another good feature was the collections of hardy bulbous and herbaceous perennials, which appear to be well grown in the locality; and there were some pretty floral decorations. Messrs. W. & J. BROWN, nurserymen, Stamford, taking the 1st prize, with an arrangement showing the various uses to which flowers could be put.

DEVON AND EXETER GARDENERS' ASSOCIATION.

JULY 14.—The summer outing of this Association was held on the above date, eighty persons participating, the destination being Mount Edgcumbe. Mr. Richards, gr. to the Earl of Mount Edgcumbe, conducted the visitors through the main avenue to the Orangery. The Orange-trees, sixty in number, stand in square tubs, and date from the time of Queen Elizabeth. There are many varieties, and the collection is in fine condition.

In the Italian garden were some fine half-hardy plants doing well. *Araucaria excelsa* (in tube) about 10 feet in height; *Alsophilla australis* 7 to 8 feet; *Abutilons* 18 to 20 feet. Leading to the French garden was an *Ilex* hedge of about 20 feet high, and a fine *Cedrus Deodara*, which were blown down by the blizzard of 1891. Both the hedge and the Cedar had been successfully set up again, and seemed little the worse for the ordeal. In this garden are some grand clumps of Bumbos, one of *Arundinaria nobilis* being 30 feet high. Here was a Holly, with a bole of 25 feet high up to the first branches, and having a girth of 6½ feet. An *Ilex* of about 90 feet high had a spread at top quite equal to its height; and a Cork Oak hard by measured 8 feet 4 inches round the trunk. There were a pair of *Chamaerops excelsa* of 10 to 25 feet, and a fine specimen of *Juniperus bermudiana* and *Cupressus torulosa*.

The next move was to the Picklecombe Fort, whence a fine view of Plymouth, Stonehouse, and Devonport, Drake's Island, the Breakwater, the estuary of the Tamar, and Dartmoor is obtained. Still ascending the slope, the Countess Caroline garden was reached, in which the *Metrosideros*, *Rhynchospermum*, *Eucalyptus*, and similar plants were flowering profusely. Amongst them was a *Benthamia fragifera*, about 30 feet, just going out of flower.

An inspection of the flower-beds surrounding the mansion, and a saunter down the drive, brought the visitors to Cremyl Ferry, where a special steamer took the party across to the Devonshire side of the Tamar, Mount Edgcumbe being in Cornwall. The party then proceeded to Devonport Dockyard, and after inspecting certain parts of the Dockyard, and the ships now building, adjournment was made to St. George's Hall, where luncheon was served, Mr. ANDREW HOPKINS occupying the chair.

NATIONAL ROSE.

JULY 15.—The Northern Show was held in conjunction with the Norfolk and Norwich Horticultural Society, in the grounds of Carrow Priory, Norwich, one of the seats of J. J. Colman, Esq. Some of the most notable exhibits were as follows:—

NURSERYMEN.

Roses.—Best thirty-six single trusses: 1st, Mr. B. R. CANT, Colchester, with grand specimens, of which the following varieties were particularly praiseworthy:—*Duchesse de Morny*, *Suzanne Marie Rodocanachi*, *Mrs. John Laing*, *Her Majesty*, *Muriel Grahame*, the beautiful sport from Catherine Mermet, *Ernest Metz*, *Helen Keller*, and *Madame Delville*. This prize carried with it the Jubilee Challenge Trophy and Gold Medal. Messrs. HARKNESS & SON, of Bedale, were 2nd, and secured the Silver Medal for the best H.P. in the show, with a glorious bloom of *Earl of Dufferin*.

Mr. B. R. CANT again took premier honours for seventy-two distinct single trusses, amongst which *Dr. Andry*, *Beauty of Waltham*, and *J. S. Mill*, were very fine. In the same class, the 2nd Award of Merit to Messrs. HARKNESS & SON, who included beautiful specimens of *Madame Hoste*, *Star of Waltham*, *Duc d'Orleans*, and *J. S. Mill*.

For thirty six distinct trebles, Mr. B. R. CANT added to his

former victories by again winning 1st prize with a beautiful collection of blooms. *Gustave Piganeau* was an ideal flower, and the following were remarkably fine:—*Marchioness of Downshire*, *Horace Vernet*, *Duchesse de Morny*, Messrs. J. Laing, A. K. Williams, Charles Lefebvre, Comte de Raimbaud, Countess of Oxford, *Marchioness of Londonderry*, *Marguerite de St. Amand*, and *Duke of Teck*.

The Yorkshire firm, Messrs. HARKNESS & SON, were again little behind Mr. Cant. They had fine flowers of *Duke of Fife*, *Duchesse de Morny*, and *Countess of Oxford*.

In the class for thirty-six distinct single trusses, there were seven entries. Messrs. PRIOR & SON, Colchester, carried off 1st honours with a good collection, amongst which the following were specially worthy of notice: *Maman Cochet*, *Madame de Watteville*, *Mrs. J. Laing*, and *Ernest Metz*.

Messrs. TOWNSEND & SONS, Worcester, were 2nd, having lovely blooms of *Suzanne-Marie Rodocanachi*, and *Gustave Piganeau*.

The best eighteen distinct trebles were from Messrs. PRIOR & SON, Colchester, who had well-finished flowers of *Mrs. John Laing*, *Marchioness of Londonderry*, and *Suzanne-Marie Rodocanachi*.

AMATEURS.

In the class for twenty-four distinct varieties, single trusses, the 1st prize, with Jubilee Trophy and Gold Medal, were won by Mr. E. B. LINDSELL, Bearton, Hitchin, Herts, who staged fine blooms of A. K. Williams, *Earl Dufferin*, *Merveille de Lyon*, *The Bride*, and *Marie Baumann*. The 2nd honours were awarded to the Rev. J. H. PEMBERTON, Havering-atte-Bower, for a very meritorious exhibit.

Mr. E. B. LINDSELL and the Rev. J. H. PEMBERTON were again 1st and 2nd respectively in a class for thirty-six distinct single trusses.

Eight distinct trebles made a very nice show, Mr. E. B. LINDSELL once more taking the lead, thus securing 1st prize in the three most important amateur classes.

A piece of plate presented by the Mayor of Norwich accompanied the 1st prize for eighteen distinct single trusses, which was won by Mr. O. G. ORPEN, Colchester, who showed a grand flower of *Muriel Grahame*, which was awarded the Silver Medal, as being the best Tea or Noisette shown by amateurs.

TEA AND NOISSETTE SECTION.

Nurserymen.—Messrs. FRANK CANT & Co. took 1st prize for eighteen distinct single trusses, with superb blooms of grand substance and colour, conspicuous amongst which were *Ernest Metz*, *Caroline Kuster*, and *Maman Cochet*. The 2nd prize was awarded to Mr. B. R. CANT, who had beautiful blooms of *The Bride*, *Muriel Grahame*, and *Maman Cochet*.

For twelve distinct single trusses, Mr. H. MERRYWEATHER, Southwell, Notts, was 1st, showing nice specimens of *Innocent Pirola*, *Maman Cochet*, *The Bride*, and especially a magnificent flower of *Niphetos*, which secured a Silver Medal as the best Tea or Noisette in the nurserymen's classes; Mr. GEORGE PRINCE, Oxford, was 2nd, and had good blooms of *Madame Margottin* and *Catherine Mermet*.

For twelve single trusses of *Her Majesty* (open), Messrs. PAUL & SON, Cheshunt, Mr. H. V. MACHIN, and Messrs. HARKNESS & SON, took honours in the above order.

Garden Roses.—These were the objects of much admiration. For twelve bunches, distinct, arranged in a space not to exceed 4 feet by 3 feet (amateurs), Mr. MACHIN was 1st, and Mr. ORPEN 2nd.

In the open class for eighteen bunches, Messrs. PAUL & SON, Cheshunt, were 1st; followed by Mr. TURNER, Slough.

The class for a display of Roses brought one of the most beautiful exhibits in the show, being the 1st prize display by Mr. PRINCE, the tasteful arrangement of which produced a charming effect.

NEW ROSES.

Amateurs.—The Rev. J. H. PEMBERTON was 1st for six new Roses, single trusses, showing *Ellen Drew*, *Clio*, *Madame Joseph Combert*, *Mrs. Sharman Crawford*, and *Helen Keller*.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 15.—Orchid flowers of fine quality are not plentiful at this season, and the exhibits on this occasion were limited in number. The following members of the committee were present:—*Samuel Gratrix*, West Point, Whalley Range, Chairman; and Messrs. W. A. Gent (Hon. Sec.), R. Johnson, D. B. Rapport, E. J. Sidebotham, Jas. Anderson, John Cowan, G. Law-Schofield, H. Greenwood, J. Backhouse, W. Bolton, and P. Weathers.

The following plants were inspected by the committee in the order in which we place them, namely, from Captain SCHOLEFIELD (gr., Mr. Schill), *Cypripedium Godefroyae leucochilum aureum* (Award of Merit), which has the ground-colour of C. canaliculatum with the spotting of C. Godefroyae—an acquisition to its class; *Cypripedium* called *Godefroyae leucochilum*, which appears to have some bellatulum blood in it, as is evident in the self-coloured lip, and the chestnut-coloured blotches on the white ground. A First-class Certificate was awarded the variety. Captain Scholefield showed also *Cypripedium* × *Meusuraea*-bellatulum × *Veitchi*, very distinct, showing traces of both parents, especially of C. Veitchi, a nice pleasing variety (Award of Merit).

W. A. GENT, Esq., Brooklands, showed a good *Cattleya Warscewiczii*, and an indifferent form of C. *Eldorado Wallisi* (not white in the segments).

Messrs. CHARLESWORTH & Co., Heston, Bradford, showed a well grown *Cattleya granulosa aurea* with four flowers (Award of Merit), the greenish tint pervading the yellow is no drawback to the flower, which is attractive when viewed at a distance. They also showed a form of *Braemvaia Lawrenceana* var. *longissima*, to which a Botanical Certificate was awarded, which was right enough, but the variety is a very ornamental plant, which only needs good culture to make it attractive. This firm showed other plants, the more prominent of these being a crossbred between C. Boxalli and C. *canthum superbum* called *Banfishall* (this is a little too much, Mr. Charlesworth—keep to Christian names). It is a finely coloured flower, not large, but pleasing in form and colouring (Award of Merit).

THOMAS STATTER, Esq., Stand Hall (gr., Mr. R. Johnson), showed a plant of *Cypripedium callosum* *Sanderus* with a magnificent flower thereon, which was undoubtedly the finest thing at the meeting, but the variety having been certificated before it could not be dealt with. Mr. Ball's flower, certificated at an earlier meeting, although not half the size of Mr. Statter's, was identical; and the one I described in these pages last year of Mr. Gratrix, was so near its fellows in question, that they all appear to have come from one and the same plant. Mr. STATTER also showed the new *Dendrobium*, *Victoria Regina* with a few flowers upon it, receiving an Award of Merit, which is quite as much as it is worth, for when the novelty wears off, a batch of the common noble will be as much or more prized. The colour of the limbs and the lip is half white and half corulean blue, smallish in size, and not remarkable in substance. It lacks the influence of some of the choicest East Indian *Dendrobies* to place it in the front rank. Like all these other side of the world species, with its nodes and wiry-like stems, the plant may possess longevity. This exhibitor had also a good *Cattleya eximia*.

D. B. RAPPART, Esq., The Promenade, Liscaud (gr., Mr. Nicholson), exhibited an interesting *Poliochryllum Collettii*, which received a Botanical Certificate. It forms a sort of circle, with its shaking filaments, and the colour will please those who favour curiosities in Orchids.

E. J. SIDEBOTHAM, Esq., Eritone (gr., Mr. G. Shiner), showed *Cypripedium Cioela*—one of the lightest forms of the *Selenipedium* section, which the committee requested inspection again when stronger; also a flower of a good form of *Cattleya Gaskelliana*, which possesses a pleasant fragrance.

Mr. ALLEN, Sale, sent a *Cattleya superba*, which received a Cultural Commendation.

Messrs. CHARLESWORTH & Co. exhibited a showy collection, consisting of some choice *Masdevallias* and seedling *Laelio-Cattleyas*.

THE PEOPLE'S PALACE HORTICULTURAL SUMMER SHOW.

JULY 15, 16, 17.—This was the second of four exhibitions of this society during the present year, and as compared with that held at the corresponding period in 1896, was decidedly in advance of it, thus showing there is a manifest improvement in the culture of plants in the East End of London. The exhibitors are grouped in two main divisions, viz., those living in the more crowded parts, such as Mile End, Stepney, Limehouse, Plaistow, Wapping, &c., which are known as congested districts, and those lying beyond these, which are more favourable to plant-culture; a group of classes being allotted to each.

The best ground group of plants in the open division came from Mr. E. J. PETHER, 99, Grove Road, Walthamstow, who has a small greenhouse in the back-garden; and that in the congested division from Mr. W. F. KEARNS, 105, Old Church Road, Stepney.

In the open division there was a class for a smaller group, the 1st prize going to Mr. A. J. FOSTER, 57, St. Donata's Road, New Cross. Among flowering plants there were fine specimens of *Fuchsias*, *Plumbago capensis*, *Nerium Oleander*, *Pelargoniums*, &c., and of foliage plants *Aspidistra*, *Ficus*, *Dracena*, *Coleus*, &c., some excellent Ferns being also staged, and capital Fern cases. The most conspicuous examples of plant culture were two large fan-shaped *Fuchsias*, 5 feet by 4 feet, grown by a dock labourer, who with his wife occupy a small room at 9, Court's Road, Burdett Road, E. One was very finely bloomed, the other coming into flower; foliage and flowers alike were admirable. These two plants greatly interested H. R. H. the Duchess of ALBANY, who opened the exhibition, and in each case they were awarded special extra prizes; one plant occupies each of the two small windows, and they have the greatest attention. The favourite hanging window plants are the blue and white *Campanula isophylla*; there were pretty baskets of mixed plants also. There were thirty-six classes in all, and only two or three failed to bring competitors.

Very fine non-competitive groups of plants were sent by His Grace the Duke of FIFE, President of the Society; His Grace the Duke of NORFOLK, Lord ROTHSCHILD, A. F. HILLS, Esq., Messrs. HOLMES, Frampton Park Nurseries, &c. Splendid Roses from Messrs. C. E. SHEA and T. B. HAYWOOD, those from the former particularly fine; the Hon. T. A. BRASSLEY, &c. A very fine collection of Malmalson Carnations from His Grace the Duke of WESTMINSTER; a series of very handsome floral arches, from Mr. J. R. CHARD, court florist, of Stoke Newington; sprays of *Violas* in great variety from Mr. W. BAXTER, florist, Woking, and others. Early in September there will be an exhibition of *Dahlia*s, this flower being largely grown in the East End.

NATIONAL VIOLA.

JULY 17.—The exhibition of Viola flowers during such weather as occurred in the South of England last week is apt to be attended with unsatisfactory results. The Viola is one of the least adapted of flowers to withstand continued hot sunshine in July; and even in shady borders, the plants become exhausted, and the leaves thin and small, and the flowers of diminished size and ephemeral existence. But when they have been cut and taken to an exhibition 400 miles distant, the effort to display themselves is feeble in the extreme. Then there are comparatively few persons (at any rate south of the Tweed) who take an interest in Violas for exhibition purposes; they share, in this respect, much the same fate as do Tulips. These circumstances are more than sufficient to explain the character of the second exhibition of the National Viola Society, held on Saturday last in the gardens of the Royal Botanic Society, Regent's Park. It would have been very insignificant in continental eyes as the product of a "National" Society, no doubt, but under the circumstances, nothing better could have been expected. Nevertheless, the Viola is a beautiful and very useful garden plant, especially in certain districts, and under favourable circumstances. It is in a dry season that the Viola is disappointing, and to provide against this the necessary measures are not within the possibilities of every gardener. We have seen the circumstances overcome, however, and in a garden within 8 miles of Whitehall. The principal means have been the removal of the naturally light soil, which has been replaced by good loam, and made rich enough to suit the Viola, and then, after planting, there has been unremitting care in watering and pegging, and, moreover, the plants have been sprayed each morning and evening. Given such treatment, Violas are capable of providing uncommon and very beautiful garden effects unassociated with any other plants. There was a trial of Violas last season under the auspices of this Society, and the varieties afterwards recommended for planting were given in the *Gardeners' Chronicle* for August 15, 1896. The value of a variety of Viola cannot be adjudged correctly unless its habit of growth be known.

OPEN CLASSES.

The best collection of forty-eight sprays of Violas, distinct, nine blooms in each spray, was shown by Mr. W. BAXTER, Woking, who won a Gold Medal. A collection from Scotland, shown by Messrs. JNO. FORBES, Hawick, being 2nd. It was a Scotch grower, however, who won the Gold Medal for a similar collection of Pansies, the 2nd prize going to Messrs. I. HOUSE & SON, Coombe Nursery, Bristol.

The 1st and 2nd prizes for twenty-four Fancy Pansies, distinct, went to Mr. M. CAMPBELL, Blantyre, N.B., and Mr. JNO. SMELLIE, Bushby Nurseries, N.B.; but in the class for twelve blooms, these two competitors occupied reverse positions.

Twelve blooms of the florists' Show Pansies were best from Mr. JNO. SMELLIE, and the same exhibitor won for twenty-four sprays of Violas, six blooms in each spray.

There were classes also for rayless varieties, and for miniature rayless flowers, also for yellow self and white self Violas. Messrs. I. HOUSE & SON won in the class last named, showing *Christiana*, *White Empress*, and *Countess of Hopetoun*.

A dinner-table decorated with Violas and their own foliage was shown in competition, but it was hardly noteworthy.

In a class for six Violas (tufted Pansies) in pots, of varieties to be selected from a given list, the 1st prize was won by Mr. D. B. CRANE, Highgate, N.; and having more control, perhaps, over such plants than those in a border, the quality of these was satisfactory, the growths being quite strong. Messrs. I. HOUSE & SON were 2nd.

Mr. L. BROWN won 1st prize in a class for three sprays of miniature rayless Violas, not to exceed 1½ inch; the varieties were *Blue Bell*, *Violetta*, and *Beale*.

Amateurs.—The number of competitors in these, as in the open classes, was small. Mr. JAS. MAXWELL, Dalton Newton, was 1st for twelve fancy Pansies and for six show Pansies; the best collection of twelve sprays of Violas being shown by Mr. R. T. DOUGALL, whose flowers deserve commendation, being bright and fresh-looking. Mr. JAS. MAXWELL was again 1st in the smaller class for six sprays.

Mr. D. B. CRANE had the best six sprays of rayless Violas, showing *Floral*, A. J. Rowberry, *Lord Witch*, *Nellie*, &c. Mr. CRANE was also 1st for three sprays of white self Violas, showing *Ethel Hancock*, *Nellie*, and *Christiana*. A spray each of the varieties *Duchess of Fife*, *White Duchess*, and *Goldsmith*, were from Mr. J. J. SHELFORD, South Woodford, Essex.

The Hon. Secretary to the Society (Mr. A. J. ROWBERRY) won 1st prize for a collection of eighteen varieties of Violas, six blooms of each, arranged in specimen-glasses, with 12 1/2 inch foliage. He was followed in this class by Dr. BRACKLETON.

Messrs. DOBBIE & Co., Rotheay, and Messrs. I. HOUSE & SON, made honorary exhibits of Viola and Pansy blo

NATIONAL CARNATION AND PICOTEE.

JULY 21.—From a spectacular point of view, the change of the site of this exhibition from the Crystal Palace to the Royal Botanic Society's Gardens, in the Regent's Park, scarcely proved satisfactory. The excessive heat of Saturday last led to the abandonment of the intention to hold the exhibition in the glass-covered annex, and the exhibits were placed on the turf banks under the large exhibition tent. Parched grass was scarcely an appropriate background to the flowers, and then they were below the eye, rendering an examination of the blooms, and the deciphering of the names, difficult. But, as Mr. Martin R. Smith remarked at the luncheon, the attendance of the public was a matter of small importance, the main thing being that the Carnation growers should have a chance of seeing what each grew, as if the takings at the gate are a matter of no consequence. That the Crystal Palace is the best place in which to hold such an exhibition, there can be no doubt; but if it is again held in the Regent's Park, it would be much better to exhibit the flowers in a tent erected on the lawn. The blooms of Carnations always look best when staged on tables covered with green baize or calico. While the exhibition, being so varied in character, was full of interest, yet in point of contrast with some which have preceded it, it was lacking in fine quality. Mr. Smith said truly that it is difficult to have the earlier-blooming bisarras and flakes in flower at the same time as the selfs and fancies, which are later in opening. There were some remarkably good blooms of bisarras and flakes in some of the stands, but many were small and rough. Southern flowers were past their best in not a few instances; but then, nobody can control the incidence of the season, and a date being fixed, the growers must do the best they can, and this they heartily attempted to do on this occasion. The light improved in the afternoon, and there was a good company.

Bisarras and flaked Carnations.—The fact that there were eight collections of twenty-four blooms in not fewer than twelve varieties, speaks volumes for the popularity of this class, and it was gratifying to witness the Royal Nursery, Slough, showing something of its old prowess. Mr. TURNER's leading flowers were S.B. Robert Houlgrave, P.P.B. Arline, S.F. Guardsman, P.F. Prince George of Wales, P.F. Charles Henwood, C.B. Thaddens, S.B. C. H. Herbert, P.F. Billy Henderson, S.F. Tom Pinley, S.B. Duke of York, and I.P.B. John Ball, several of these being in duplicate. 2nd, Mr. MARTIN ROWAN, Manor Road, Clapham, his leading blooms being S.B. Robert Houlgrave, R.F. Mrs. Rowan, C.B. J. S. Hedderly, P.F. George Melville, P.F. Gordon Lewis, S.B. Robert Lord, P.F. Geo. Douglas, S.B. Admiral Curzon, and S.F. Sportsman. Mr. J. DOUGLAS, Great Gearies, Ilford, wa

With twelve blooms, there were four competitors, Mr. C. PHILLIPS, Bracknell, Berks, taking the 1st prize, with S.F. Guardsman, C.B. Master Fred, R.F. Lady Mary Currie, C.B. Fred Phillips, S.B. George, P.F. Geo. Melville, S.F. J. P. Sharp, C.B. Geo. Rudd, C.B. J. S. Hedderly, S.B. C. H. Herbert, P.P.B. Sarah Payne, and S.B. Robert Lord. 2nd, Messrs. THOMSON & Co., nurserymen, Birmingham.

There were five collections of six blooms, Mr. A. R. BROWN, Handsworth, Birmingham, being 1st with R.F. Thalia, P.F. Geo. Melville, C.B. J. S. Hedderly, S.B. Alfred Hudson, S.F. Guardsman, and C.B. James Merryweather; 2nd, Mr. W. GARTON, Jun., Wools on.

Selfs.—The best twenty-four blooms came from Mr. M. R. SMITH, Hayes, Kent and represented his newest seedlings, such as *The Nalad*, Mrs. Prinsep, Maron, President and Boreas, Solon and *The Cadil*, yellow; Mrs. McRae and Boniface, scarlet; Endymion, very fine, and *Tragedians*, rose; *Elise*, pink; Her Grace and Purity, blue; *Platymon*, Helmsman, and Mrs. E. Hambro, white. Mr. C. TURNER was 2nd, having *Loveliness*, pink; *Iona*, white; and *King of Scarlets*, scarlet, as his best.

With twelve selfs, Mr. E. C. SHARPIN was 1st, chief among them *Nabob*, *Apricot*, *Ruby*, *ruby-purple*; *Sea Gull*, and Mrs. Colby Sharpin. 2nd, Mr. C. PHILLIPS, Bracknell, who had *Lord Wantage*, a fine yellow self; *Ladae*, *Felicity*, &c.

For Six Selfs.—Mr. S. A. MOUNT, Thames Ditton, 1st; Mr. A. R. BROWN, Birmingham, 2nd, with much more refined bloom.

Fancies.—These consisted largely of yellow-ground flowers and they were very good. Mr. C. TURNER was 1st with such fine varieties as *The Gift*, *May Queen*, *Virgo*, *George Cruickshank*, *Primrose League*, also *Duchess of Portland*, white with slight stripes of rosy red, and very pretty; and some seedlings. Mr. J. DOUGLAS was 2nd with *Carina* and *Haytle*, two very fine yellow grounds; and *Pelegia*, heliotrope flaked with scarlet. In the 12 varieties Mr. C. PHILLIPS was 1st and Mr. Geo. CHAUNY, 2nd. There were several stands of six Fancies each, the best coming from Mr. W. GARTON, Woolston, 1st, and Mr. A. GREENFIELD of Palton, 2nd.

Single blooms.—It will suffice if the names of the two leading varieties of each type of Carnations be given—S.B. Robert Houlgrave and Admiral Curzon; C.B. Master Fred and Skirving and Ellis Crossley, P.F. Melas, S.F. John Wormald and Beham and Thalia. Selfs, Guy; rose, *Loveliness*; Ian and Uncle Tom

ellow, *Lord Wantage*, and *Germania*; buff, Mrs. Colby Sharpin and *The Beau*. Fancies, *Broderick* and *Cecil Rhodes*.

Picotees, white grounds.—There were six collections of twenty-four blooms, Mr. C. TURNER being 1st with *Red edges*, *Brunette* and Mrs. Gordon; purple edges, *Mary*, *Clara Penson*, and *Muriel*; rose edges, *Favourite*, *Lady Emily*, *Van de Weyer*, *Little Phil*, and Mrs. Payne, these were the leading varieties, and duplicates were permitted to be shown. Mr. J. DOUGLAS 2nd with, among others, beautiful light rose-edged flowers named *Fortrose* and *Athens*.

Messrs. THOMSON & Co., Birmingham, had the best twelve varieties, which included the red-edged *Isabel Lakin* and *John Smith*; purple-edged Mrs. Anderson; rose-edged *Little Phil* and Mrs. Sharp; 2nd, Mr. Geo. CHAUNY, Oxford.

Mr. A. R. BROWN, Birmingham, had the best six varieties Mr. T. ANNETTS, Brill, being 2nd in this class.

Yellow-ground Picotees.—Mr. M. R. SMITH took the 1st prize for twelve blooms, his leading varieties being *Badminton*, *Doria*, *Voltaire*, *Mohican*, *Golden Eagle*, *His Excellency*, *Borderer*, and Mrs. Tremayne; Mr. J. DOUGLAS 2nd, with blooms distinct from the foregoing, viz., *Empress Eugénie*, *Xerxes*, *Hygeia*, and *Miss Violet Douglas*.

With six varieties, Mr. F. HOOPER, of Bath, was 1st, with *May Queen*, Mrs. Gooden, *Florie Henwood*, *Ladae*, Mrs. B. Sydenham, and a seedling; Mr. C. HARDEN was 2nd.

Picotees, Single Blooms.—The best H. Red E. were *Gany-me-le* and *Brunette*; L. Red E., Mrs. Gorton and *Acorn*; H.P.E., *Polly Brazil* and *Muriel*; L.P.E., *Summerdale* and *Ether*; H. Ro. E., *Lady Laura* and *Little Phil*; L. Ro. E., Mrs. Payne; H. Scarlet E., *Duchess of York* and Mrs. Sharpe; L.S.E., *Fortrose* and *Favourite*. *Yellow Grounds*, Mrs. Douglas and *Ladae*.

Premier Carnations and Picotees.—Bizarre Robert Houlgrave (M. Rowan); flaked *Matador* (J. Douglas). Self: Mrs. Prinsep, yellow (M. R. Smith); Fancy, *Badminton* (M. R. Smith). Picotees, heavy edge, *Duchess of York*, rose (C. Turner); light edge: *Fortrose* (J. Douglas).

Undressed flowers, and no cards.—The classes for these exhibits numbered seven, and they may be passed over; each bloom was arranged with a single spray of Carnation foliage, if these classes could be made to suggest something better than an ordinary button-hole, they might possess some educational value, but they do not. The class for six blooms for those who had never won a prize brought a large competition.

Prizes were offered for seedlings, but owing to the late hour at which judging commenced, it was difficult to gather up particulars of the awards. It was understood that a Certificate of Merit was awarded to Mr. J. DOUGLAS's fine light-rose-edge Picotee *Fortrose*. A number of seedlings were staged; and that one Certificate only was awarded shows they were, with this one exception, improvements upon existing varieties.

Plants in Pots.—The best collection of specimens in pots filling a space of 5½ feet, came from Mr. MARTIN R. SMITH. It included a very fine lot of superbly grown new varieties, having among them several very fine new yellow selfs. Mr. CHARLES TURNER was 2nd. The only group filling a space of 30 feet was staged by Mr. J. DOUGLAS, who was awarded the 1st prize.

Mr. M. R. SMITH had the best twelve specimens in pots, several of them new varieties, chief among them being *Lady Jane Grey* of a very pleasing tint of rosy-heliotrope. Other fine new varieties were also staged. There was a class for a single specimen also, the best appeared to be a bright red seedling from Mr. M. R. SMITH, having twenty-five expanded blossoms; Mr. C. TURNER coming next with *The Gift*, one of the best of the yellow grounds.

Table decorations.—These included a dinner-table arranged for twelve persons, the floral decorations to consist entirely of Carnations and Picotees. Three were arranged, Mr. C. BLICK taking the 1st prize, with most elaborate arrangements, consisting of a large centre and two end stands, with numerous small vases, &c., filled with blooms, appropriate foliage being employed. Mr. BLICK confined himself to soft tints in his flowers. Mr. W. GREEN, Jun., Harold Wood, was 2nd, the design and execution being similar, but not so lofty or so well finished. Mr. J. DOUGLAS had the best vase, very light and elegant; Mr. V. CHARRINGTON was 2nd. Spray and button holes were also shown, in most cases stiff and formal; at any rate, nothing fresh or novel was gleaned from these two classes.

The Martin Smith Prizes for flowers from the open borders were again offered. One was for the best bunch of a self-coloured variety, another was for six varieties of selfs, and another for nine bunches of flake, bizarre, or fancy Carnations. In looking carefully through the flowers sent in competition, they appeared to be somewhat ordinary varieties, and it would seem that anything does to put into a bunch, quality being a secondary consideration. The varieties shown on the first two occasions of the institution of these prizes were decidedly better than they have been of late, and deterioration rather than progress was the rule. The bunches were all staged low down, and in an indifferent light, and perhaps they were not seen to the best advantage.

Miscellaneous Exhibits included a table of handsome-leaved *Caladiums* and foliaged plants from Messrs. B. PREST & SONS, Lower Norwood, a table of very pretty *Arcadian*, *Victorian* and *Jubilee* designs in flowers; a very pleasing addition to the show from Mr. J. R. CHAND, Stoke Newington; collec-

tions of cut Carnations from Messrs. JAS. VEITCH & SONS, CHELSEA; W. CUTBUSH & SONS, Highgate, N.; M. E. F. HOPPER, nurseryman, Hoddesden; and Mr. JAMES DOUGLAS, Bookham; with bunches of Sweet Peas from Messrs. BARR & SONS.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr., for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					Inch.	Ins.	No. of Rainy Days since Jan. 1, 1897.	Percentage of possible Duration for the Week.
	Above (+) or below (-) the Mean for the week ending July 17.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 1, 1897.	Below 42° difference from Mean since Jan. 1, 1897.				
0	3 +	111	0	+ 53	- 8	8	119	20.6	70
1	aver	106	0	+ 14	- 12	7	108	14.8	69
2	2 -	100	0	+ 63	- 78	6	100	11.5	70
3	1 -	123	0	+ 146	- 124	6	98	12.0	68
4	1 +	184	0	+ 111	- 115	6	97	14.1	70
5	3 +	152	0	+ 190	- 180	6	90	14.8	73
6	2 +	123	0	+ 27	- 21	8	117	22.6	70
7	2 +	137	0	+ 100	- 92	7	112	16.5	75
8	4 +	153	0	+ 202	- 138	7	111	21.4	74
9	4 +	134	0	+ 2	- 8	7	127	21.1	66
10	4 +	141	0	+ 114	- 57	5	119	22.3	64
* 4	+	158	0	+ 270	- 85	5	123	18.4	65

The districts indicated by number in the first column are the following:—

0, Scotland N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, F.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; *Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending July 17, is furnished from the Meteorological Office:—

"The weather was, upon the whole, exceedingly fine and dry, the rainfall being confined almost exclusively to the extreme western and south-western parts of the kingdom, where showers fell during the latter half of the week. Fog and mist were, however, somewhat frequent on our west and south-west coasts.

"The temperature was slightly below the mean in 'England, N.E. and E.', and only just equal to it in 'Scotland, E.' In all other districts it was above the normal, the excess varying from 1° in the 'Midland Counties,' to 4° in Ireland, 'England, S.W.,' and the 'Channel Islands.' The highest readings occurred at various times in the different districts, but mostly during the latter half of the week, when the thermometer rose to 80° or more in all districts excepting 'England, N.E. and N.W.' and 'Ireland, S.,' and to 88° in 'England, S. and S.W.' At Shields and Spurn Head it did not get above 65°. The lowest readings were observed, as a rule, on the 11th or 12th, and were somewhat low for the time of year, the thermometer falling to 35° in 'Scotland, E. and W.,' and to 45° or less in all other districts excepting 'England, S.' and the 'Channel Islands.' The daily range was very large, especially at some of the inland stations in Scotland; at Braemar the mean daily range for the whole week amounted to over 32°, and at Lairg to very nearly 35°.

"The rainfall.—With the exception of some very local showers in the 'Midland Counties,' no rain was experienced in any of the Wheat-producing districts, or in 'Scotland, W.' and 'England, N.W.' In Ireland, however, as well as in 'England, S.W.' and the 'Channel Islands,' some showers were experienced towards the close of the week; but even in these districts the aggregate fall was very much less than the mean.

"The bright sunshine was considerably in excess of the mean, the percentage of the possible duration amounting to 65 or more in all districts excepting 'Ireland, S.' Over the west and south of England it ranged between 73 and 75."

NOTICES TO CORRESPONDENTS.

* * FRUIT CROPS OF THE YEAR.—The Report of the condition of the Fruit Crops will appear in our issue for July 31, and will be followed by remark upon the subject in the following issues.

BREEDING OF VINES IN HOT-WEATHER: J. Clayton. We shall be pleased to publish any notes on this subject with which you may favour us, which will doubtless catch "H. A. C.'s" eye.

CARNATIONS "RUNNING": Carnation. Too much manure in the soil, or excessive surface feeding (the plant not being a gross feeder) will cause the colours to become clouded or indistinct; moreover, the Carnation is very liable to "sport." Where run flowers abound it is certain that the soil is too good for them; but in a large collection even when grown in a suitable kind of soil, some varieties are sure to sport more or less, sporting being inherent in the florist's highly-bred strains.

CATTLEYA LABIATA GASKELLIANA: B. A. The purple markings on the petals of the plant may not appear when it flowers again. Such markings, however, are frequently more or less constant, and the most marked cases are usually associated with or caused by a disease of the plant.

CHRYSANTHEMUM DISEASED: Grower. The leaves are attacked by a fungus, *Cylindrosporium Chrysanthemi*. Spray with a solution of potassium sulphide, 1 oz. to 2 gallons of water will be strong enough for this fungus. G. M.

FUNGUS: A. D. W. *Dædalea quercina*, generally affecting old Oak stumps and logs, but also supposed to be parasitic on wounds on living trees of the Oak. Remove everything in the plantations which would serve as hosts, and destroy by burning all specimens of the fungus.

GARDEN PEAS: John Shaw. They are dead, but what has killed them is not evident. Search the soil for the larvae of the cockchafer, wireworm, daddy-long-legs, and various weevils. The mole cricket does mischief in this way at times.

GLOXINIA FLOWERS GOING OFF: J. W. Apparently entirely due to scalding. There is no trace of fungous disease. G. M.

IVY-LEAVED PELARGONIUM: L. L. Directly the inflorescence was lifted from the box the petals fell away completely. They are very bright in colour.

JAPANESE PLUMS: An Exhibitor. We are unable to tell you more about these Plums than appears on p. 190 in our issue for August 15 last. It is really a Plum, and must be shown as such.

MUSHROOM CULTIVATOR: Mushroom. Will our correspondent who wrote to us for information concerning the business of a Mushroom-grower, kindly send his full address? We having a communication from another person to send him.

MUSHROOMS: A. S. Norwich. This disease is not uncommon on Mushrooms, generally affecting an entire bed. The cap is puckered and distorted, as are also the gills. It is generally considered to be caused by a parasitic mould, but of this only the mycelium has been seen. Others of the same tribe, in an uncultivated state, are also attacked, and ultimately produce what is termed *Hypomyces*, which pervades the whole fungus, and develops fruit of both kinds—conidia and ascospores. M. C. C.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—W. Early. *Heuchera sanguinea*.—F. F. A form of *Dianthus Seguieri*.—Mr. K. Shortlands. *Stapelia cupularis*, see also p. 45.—E. P. W. 1. The male flowers of the common Hop (*Humulus Lupulus*).—2. *Colutea arborescens* (Bladder Senna).—3. *Spiraea Lindleyana*.—J. M. C. Wretched scraps, completely shrivelled when received. 1. *Tenacium scorodonia*; 3. *Lotus corniculatus*; 6. *Agrimonia eupatorium*; 7. *Stellaria Holostea*; 2, 4, and 5, not recognisable. Send better specimens.—N. Devon. *Philadelphus*, perhaps *P. coronarius*.—*Armitage Bros.* *Eryngium Oliverianum*.—W. P. Gunn. 1. *Koehleria cristata*; 2. *Phalaris arundinacea*; 3. *Agropyrum junceum*; 4. *Elymus arenarius*.

NEW YORK OR PHILADELPHIA: J. D. We cannot take the responsibility of advising you. You say you are sailing shortly. On arrival you will naturally make enquiries for yourself at the nurseries and newspaper offices.

RED SPIDER AND THRIPS ON FRUITING VINES: Constant Reader. Cut the ripe Grapes and store the bunches, each removed with 6 inches of the shoot on which it grew, in wine bottles filled with clean water, into which a bit of charcoal is dropped; then proceed to clear the foliage of the pests. As a beginning, vaporise the viney with XL All, following this up by syringing for a week or longer, keeping the viney cool and well aired by day and night. In the viney where unripe fruit is hanging, you must do what is possible by syringing the foliage with rain-water without wetting the bunches. It will not be prudent to fumigate or make use of an insecticide in this house. We have no experience of the effects of XL All on the fruit; but perhaps some of our correspondents who may notice this paragraph will kindly give you theirs in a future issue.

ROSE: W. W. The white form of *Rosa rugosa*. The red-flowered Rose in your garden is doubtless *R. rugosa* also. The hips of this species, which are usually numerous produced, have a very gay appearance, and they make a delicious preserve.

TOMATO DISEASED: J. D. Affected with common "spot," caused by the fungus *Cladosporium*. Remove and burn every fruit showing symptoms of attack.

TOMATO DISEASES: A Puzzled One. The Tomato is liable to attack from many species of fungus, and they vary according to the conditions under which the plants are grown, whether in houses, or out-of-doors. The injury to fruits is most often caused by *Cladosporium lycopersici*. The symptoms are black decayed spots upon the fruit, one of which will generally be found at the apex. The species of fungus connected with "black-spot" were illustrated and described in the *Gardeners' Chronicle*, November 12, 1881. *Cladosporium fulvum* attacks both leaves and fruits, but more frequently the leaves. It occurs in the form of brown, dusty patches on the lower surface of the leaf. In some bad cases, the plant when shaken will throw off a cloud of spores. See *Gardeners' Chronicle*, October 29, 1887. The Potato disease—*Peronospora infestans*—attacks Tomato-plants occasionally, but so far as our experience goes, in the open air only. Then there is the "sleepy disease," or *Fusarium Lycopersici*, one of the most deadly of all; and, until latterly, very infrequent in these islands, but which we fear is now spreading. The *Diplocadium* and *Fusarium* stages, as well as the resting-spores, were figured and described by Mr. Geo. Massee in the *Gardeners' Chronicle* for June 8, 1895. The above fungus diseases are the most common and disastrous, but there are many other fungi which occur with those mentioned, or separately. Careful spraying with weak Bordeaux Mixture or sulphide of potassium is a good means of prevention. Of course, it should not be done when the fruit is ripening. Remove all affected plants, and burn them if possible.

TOMATO LEAVES DISEASED: Vortex. A disease of the leaves, *Cladosporium fulvum*, described and figured in the *Gardeners' Chronicle*, vol. ii., 1887, p. 533. It may be kept in check and perhaps prevented by fungicides, such as Bordeaux Mixture and sulphide of potassium.

WHITE CLOVER: A. H. O.K. If you can bear with the unsightliness for a season or two, and you take means to encourage the grasses by applying liquid-manure and top dressings of loam and wood-ashes in the spring, sowing some fine grass seeds on the spots most covered with the Clover, the latter will gradually disappear, the grasses having smothered it out of existence. The Clover is usually sown with the grasses to maintain a green cover for the land, and as a protection to the roots of the grasses whilst these are young and have not spread. The variety to use in lawn mixtures is *Trifolium repens*, which is of dwarf growth. Of course, you could dig up the lawn in September and resow.

COMMUNICATIONS RECEIVED.—W. M.—G. Fulford.—D. T. F.—J. L.—R. L.—F. K.—E. C.—E. B.—J. B.—J. J. W.—A. P.—J. H.—Hamburg Gartenbau Ausstellung, Program of Fruit Show from September 24 onwards.—R. B.—W. R.—*Chester Courant*.—H. M.—M. D.—E. B.—J. M.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—C. J.—W. R. & SONS.—E. J. L.—E. & F. B.—C. W. S., C. P.—C. B., H. L., F. G. L., and J. G., all next week.



THE

Gardeners' Chronicle.

SATURDAY, JULY 31, 1897.

THE DISEASES OF PLANTS.

THROUGHOUT a long series of years the pages of the *Gardeners' Chronicle* have from time to time conveyed much information regarding the diseases and ills connected with plant life—and its work continues, for the foes still advance. Now-a-days, however, the prevention and remedy of disease come more to the front, and naturally this aspect appeals to the cultivator of plants. There has never been any lack of suggestions for the cure of disease in our gardens and plant-houses, yet within the last ten years or thereabouts, remedies may be said to have showered on us at all times and in all kinds of gardening periodicals, till one feels lost in the numbers, and when a pest appears amongst our plants it is difficult to know what to do.

The subject of diseases of plants is a wide one, too large to be successfully grasped, even after long experience, while in many points there is too much obscurity as to the cause of disease to allow of successful treatment or cure. From the multitude of diseases liable to appear amongst plants, two classes stand prominently forward: (1) those due to the action of parasitic plants, particularly Fungi; (2) those due to injurious animals, particularly Insects. The remaining diseases have their cause in adverse soil conditions, in mistakes of cultivation, in defects in the plants themselves, or in other causes at present difficult or impossible to make out. In the present series of papers it is proposed to deal with the first class of diseases only—with those caused by the action of injurious plant-organisms on such plants as are useful to the out-door or in-door gardener. Diseases of this class are sufficiently common and disastrous enough in their results to be only too familiar, and their importance needs no further emphasising than to recall the ravages of Potato Disease, Vine Mildew, Damping-off Fungus, and the Hollyhock Rust of former days, not to mention the thousand-and-one mildews, rusts, and blights of less consequence. The subject of fungi is, to the ordinary gardener or cultivator of plants, one fraught with many difficulties arising from the minute structure and complex life-history of these tiny organisms, and any text-books available tend to bring these very difficulties into prominence. This is no doubt necessary and valuable in its way, yet we believe that, as in a "first aid" ambulance training, it is possible by a few exact observations to know enough about a fungus-pest to understand how to proceed against it. We do not then propose to deal with the fungi themselves any more than is necessary to understand them, but refer the seeker after detail in this direction to the books, some of these are—*Diseases of Field and Garden Crops*, (1884) Worthington G. Smith; *Diseases of Plants*, Professor Marshall Ward; *Diseases of Trees*,

Translated from the German by Professor W. Somerville (Macmillan, 1895); *Diseases of Plants due to Cryptogamic Parasites*, Translated from the German by William G. Smith (Longmans, 1897).

For all kinds of plant-diseases the treatment is one of two kinds: (1) preventive, aimed at keeping the disease away altogether; (2) remedial, which aims at destroying the offence. To prevent disease is more truly the work of a gardener than to cure it, for, after all, his efforts towards remedy cannot go much beyond the stage of "first aid;" if more be needed, the specialist should be applied to. To keep one's plants free from disease requires more skill, foresight, and experience than to try remedies; it also demands great patience, for, as it were,

drum \times radico-vitellinum described in the *Gardeners' Chronicle*, July 10, 1897.

Although the seeds were produced by *Lælia purpurata*, the plant has the slender, reed-like, leafy, root-bearing stems of *Epidendrum radicans*, and the flowers are borne on a slender peduncle, the whole in the present instance being 14 inches in height. The plant has one perfect flower, and two abnormal ones, and therefore they do not all appear to possess but four segments as mentioned in the description of *E. \times radico-vitellinum*; there is therefore every reason to believe that when strong grown the flowers will be normal. The abnormal flower examined is very singular. The only organ which preserves its identity is the lip, which is attached to the column in the basal third of its length, and is free in the remaining portion. The other segments are an outer one, consisting of two sepals; another



FIG. 20.—VEITCH'S PERFECTION STRAWBERRY = WATERLOO \times BRITISH QUEEN.
(Shown by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, at the Royal Horticultural Society Meeting, July 13, 1897.)

the results are negative, no disease appears; but, on the other hand, the value of the crop repays all the extra care in raising. William G. Smith, Edinburgh.

NEW OR NOTEWORTHY PLANTS.

EPILÆLIA \times RADICO-PURPURATA (*Epidendrum radicans* ♂, *Lælia purpurata* ♀), new gard. hyb.

THIS is another remarkable cross raised by Messrs. Jas. Veitch & Sons, Ltd., again indicating the strong individuality of *Epidendrum radicans* as shown in the illustration of *Epicattleya \times matutina*, in *Gardeners' Chronicle*, April 10, 1897 (to which it bears a resemblance in form, size and colour), and in *Epiden-*

formed of a sepal in the same plane as the two which are joined, and a petal twisted into the inner plane, the other imperfect petal being attached to one side of the column. The mingling of the segments seems to arise mainly from the conflict between the attached column of *E. radicans* and the free one of *L. purpurata*. The colour of the flower is rich orange-scarlet; the base and centre of the lip bright lemon-yellow, broadly margined with light reddish-purple. The flower is 2 inches across, sepals lanceolate, petals ovate and pointed, lip broadly ovate, the front lobe merely divided from the side lobes by an incision on either side, which scarcely discloses the separation; crest three raised yellow keels, the middle one the longest. Mr. Seden's record is: "Sown September, 1892; flowered July, 1897." James O'Brien. [A figure of this plant will shortly appear in these pages. Ed.]

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Pot-Sea-berrries.—Let all the runners that proceed from the young plants be pinched off as soon as observed, and afford liquid-manure liberally at the roots almost daily. If a plant make more than one crown, rub off the weaker ones forthwith—one good, well-ripened crown being better than two or three small ones. In the absence of rain, the plants will be benefited by being syringed overhead with clean water every afternoon.

Watering Wall Trees at the Roots.—This is an important matter on all sunny aspects, otherwise vigorous growth and good crops of fruit cannot be looked for, and if occasionally liquid manure can be afforded, the result will be very satisfactory.

Training Young Shoots of Wall-trees.—The laying-in of young growths of Peach and Nectarine-trees with short pieces of twigs should be carried out at short intervals of time. All young shoots proceeding from the shoots of the current year should be cut back to the point of origin; the points of strong leading shoots should be pinched or cut back to a well-placed lateral, and thus give the weaker shoots a chance of gaining strength. Fig-trees require almost identical treatment to the Peach and Nectarine in this respect; and they require, if anything, rather more attention. The same may be said of the Morello Cherry, as regards the laying-in and tying-down of young shoots over bare ones of last year's growth, and the stubbing back of fore-right shoots. A watchful eye should be kept on trees of the Peach, Plum, and Morello and Sweet Cherry for aphids, and should a well-directed spray of clean water delivered from the garden-engine not succeed in dislodging the pests, the usual remedy should be applied, namely, some good insecticide used in the proper proportions, applying the mixture after the sun has gone off the trees, and syringing the latter early the following morning with clean water.

THE KITCHEN GARDEN.

By W. POWE, Gardener, Highclere Castle, Newbury.

Onions.—Onions sown last autumn will now have attained their full size, and should be pulled up and laid in the sun to dry thoroughly before taking them under cover. When sufficiently harvested, the best and soundest bulbs may be tied in bunches, and hung to the walls or rafters in a cool, airy shed, for use as required through the autumn, and the badly ripened or split specimens used up at once. Give attention to the spring-sown crops, keeping the ground free from weeds. Should mildew appear on these, dust the plants with quicklime two or three times in the early morning, at intervals of a week. If growth be prematurely stopped by this pest, the bulbs will not keep through the winter. As soon as the crop of pickling Onions has done growing, pull them up, and let them lie for a few days in the sun, turning them over daily; then remove to a dry, airy shed or room till wanted for use. The Silver-skin type, which is the best for this purpose, should be utilised as soon as possible after maturation, as they quickly deteriorate in appearance and quality.

Winter Turnips.—A large sowing should now be made of these on ground from which the early Potatoes have been lifted, merely levelling it without further digging. A good hardy winter variety is Chirk Castle blackstone, but it being one that requires a long season of growth, the seed should be got into the ground as soon as possible after this date. Although this has a black and rather uninviting exterior, the flesh is pure white and the quality is excellent. The Red Globe is also an excellent variety, hardy, and of good size; whilst if yellow Turnips are liked, Orange-jelly should be chosen. Turnip-seed should be sown thinly in drills 15 to 18 inches asunder, and the plants thinned freely as soon as large enough to handle, 9 to 12 in. being allowed from plant to plant. If those from earlier sowings are coming too quickly into use, a quantity of the bulbs may be pulled when large enough, and stored in a cool dark shed, where they will probably keep in good condition for some weeks.

Globe Artichokes.—When the best heads have been cut from these, the flower-stems and dead or decaying leaves should be removed, and a mulching of rich manure applied, followed by a heavy watering. These proceedings will result in the production of another

crop of young heads. Where, however, a new plantation is made every year in the spring, which is an advisable practice, these young plants form a succession to the older plants, good heads in quantity being generally produced by them till the plants are cut off by frost.

Carrots.—If seed of the Early Horn Carrot be sown at about this date on a warm border, a supply of tender roots will be afforded till the middle of the winter, if some slight protection against severe frost be afforded the tops.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoo Park, Luton.

Chrysanthemums.—These plants, if in pots plunged in coal-ashes, should be examined as to the state of the soil in regard to moisture twice or thrice daily, and liquid-manure afforded twice a week, which may consist of weak farmyard manure-water and clear soot-water, given alternately. Secure the points of the shoots to the stakes, and remove laterals with the thumb and finger before they get long, not allowing these to get strong before nipping them off. If any roots are exposed, afford a light top dressing, pressing it down firmly with a blunt rammer; carefully remove suckers with as little interference with the roots as possible, not using a knife for this purpose. Earwigs must be sought for night and morning, as these insects do much harm by eating off the tips of the young growths and the buds. They may be trapped in small inverted pots half filled with hay, paper, or moss, placed at intervals along the rows of plants; or 9 inch lengths of Broad Bean-stems pushed in between the plant and the stake in a slanting direction. Green and black Aphides are troublesome at this season, and should be killed with tobacco-powder, or a solution of quassia chips as previously advised.

Violets.—Those intended to flower in frames during the winter are apt to become a prey to red-spider, which, however, may be kept in check by frequently syringing the foliage with the garden-engine, and if this be not sufficient, an insecticide must be used in the water. Keep the ground stirred and free from weeds, remove all runners from the plants, and keep the bed moist, affording the soil a good mulch of spent Mushroom-bed dung.

Plumbago rosea, if thoroughly established in the flowering-pots, will require to be removed to a cold-frame in a sunny spot, but on no account must the plants be allowed to become dry at the roots, or the bottom foliage will turn of a yellow colour.

Thysacanthus rutilans.—This is a plant not so often seen now as formerly; it should be treated like the above, only that this plant prefers a moist, cool bottom in summer, and should, therefore, be plunged in a cool moisture-holding material if the bottom drainage will allow the water to pass away freely.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Barford, Dorking.

Dendrobiums.—The species, *D. Phalaenopsis*, *D. lineale*, *D. bigibbum*, *D. stratiotes*, *D. superbiens*, *D. Goldianum*, *D. Bensoniae*, *D. secundum*, and *D. streblceras* should at this season be growing freely at the top and at the root, and therefore require the greatest amount of light, heat, ventilation, and moisture. In affording water at the root, which should not be done till the compost has become dry, it should be made moist throughout, established plants being afforded water several times to ensure perfect saturation of the material. The best time to afford water is previous to closing the house in the afternoon; and when the ventilators have been closed, let the plants have a good overhead syringing, and at the same time damp the pots, stages, floors, &c. Having done this, pull up the blinds and allow the warmth from sunheat to run up to 100°—even 110° will do no harm. The hot-water pipes may be used to preserve a warmth of about 70° at night; and early in the morning a small opening for the admission of fresh air should be made at the top of the house, the amount of air admitted being increased as the day advances. The species named delight in sunshine, and even in houses having a southern aspect it will not be necessary to afford shade before 10.30 A.M. As a general rule to be observed while the blinds are drawn down, the ventilation should be slightly reduced in amount. At about 2.30 P.M. the shading may be removed, and for half-an-hour after the blinds are pulled up, air should be admitted freely till closing time. For the destruction of the black thrips

that infest *Dendrobies* in sunny houses, examine the plants every day, killing the insects and sponging off their eggs with tepid rain-water. This work of course takes time, but it is better than to have the leaves of the young growths disfigured. For killing the yellow thrips, the XL All vapour is suitable.

Schomburgkias require similar cultural treatment to the *Dendrobies* above-mentioned, especially in the matter of sunshine. *Schomburgkia tibicinis*, *S. Kimballiana*, *S. Humboldtii*, and *S. Sanderiana* now commencing to grow, should be afforded fresh material at the root if the old is getting much decayed or sour. They are plants which do not require much compost, and it should be made of peat and sphagnum-moss resting on a large quantity of clean crocks. The plants thrive either in pots or baskets, if these are brought up close to the roof glass in the lightest position. *Schomburgkia crispata*, *S. Lyonsii*, *S. undulata*, and *S. gloriosa* are of taller growth, and quite distinct in habit from the foregoing; but they require, nevertheless, the same kind of treatment. At this date their growths will be advanced, and no disturbance of the plants should take place.

Cattleya Eldorado and its varieties, *splendens*, *crocata*, and *Wallisii*, are now in bloom, requiring much care to be observed in affording water, as too much in the air or at the root at this period would cause the succulent growths to turn black, and might involve the loss of the plant. Still, the plants must not be kept dry at the root, or the pseudo-bulbs would shrivel, but they should be afforded enough water to keep the compost in a slightly moist state, and much less moist when the blooms have been removed. When growth is finished stand the plants in the coolest part of the Cattleya-house, where, if afforded full light and sufficient ventilation, they soon mature. In a few weeks time, roots will push in quantity from the base of the flowering pseudo-bulb, and from the old roots; making this a suitable time to repot any of the plants that may require this sort of attention. *Laelia pumila* and its varieties *praestans* and *Dayana*, also *Cattleya marginata*, possess beautiful flowers, and some of these plants beginning to grow anew, it is advisable to place them in a house with an intermediate temperature, and to afford them abundance of water at the root till the flowers open. Hang them from the roof in a rather shady position; and examine them frequently for a species of white scale, which infests them, doing much harm.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Strawberries.—Plants that were layered early will now be ready to remove from the beds. If they were layered in small pots the repotting should proceed without delay, well soaking the small balls if at all dry, for if potted with the soil in a dry state, they will never go away properly. Keep the crowns rather high when potting, and ram the soil firmly, leaving sufficient space for water. Stand the plants in a shady place for a day or two, then remove them to a piece of ground in full sunlight, or to the sides of the kitchen-garden walks, or wherever convenient. If placed on the soil, put an inch or two of coal-ashes beneath the pots so that worms may be kept out of them. Syringe the foliage twice daily; keep the side crowns rubbed out, as one good strong spike of flower is worth three weak ones. Where plants were layered into the fruiting-pots, they should be removed to their summer quarters at once.

Orchard-house.—The fruits in this house will now be ripening, and the syringing of the trees should consequently cease, and ventilation be freely afforded, keeping the atmosphere rather drier than heretofore. As soon as the fruits are cleared from a potted tree, remove it to the open air. Keep strong or lateral growth in bounds by pinching the points, and syringe the trees in the evening in order to keep the foliage clean.

Figs.—The trees in the early-house will now be affording a second crop of fruit, and when this crop is gathered, the house should be thrown wide open, as a means of ensuring sturdy, well-ripened shoots. Trees in later houses from which the first crop is gathered and the young fruits thinned a little, may be kept closer and warmer to enable the second crop to develop, affording the trees liberal applications of warm liquid-manure. The fruits in late houses now commencing to ripen, will require that the air be kept drier, and more air afforded. When gathering Figs, always use a sharp knife to sever the root-stalk, otherwise this is liable to be left on the tree.

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1897.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

The counties are arranged in numbered groups, to correspond with those adopted in the Weather Reports of the Meteorological Department, and followed in our weekly Weather Tables.

* * Fuller comments will be given in the following numbers. See also Leading Article on page 70.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND—										
0, Scotland, N.										
CAITHNESS	Average; very good	Under	.....	Bad; under	.....	.....	Average	Average; good	.....	W. McKenzie, Thurso Castle Gardens, Thurso
	Over; very good	Average; bad	Over; good	Average; good	.....	.....	Under; good	Under; good	Under; bad	Wm. Mackie, Dunbeath Castle Gardens
ELGINSHIRE	Average; good	Average; good	Under; good	Over; very good	Under; bad	Under; bad	Average; very good	Over; very good	.....	Wm. Ogg, The Gardens, Duffus House, Elgin
MORAYSHIRE	Average	Under	Under	Under	Under	Failure	Average	Under	.....	O. Webster, Gordon Castle, Forchabers
	Under	Average; good	Average; good	Under	Under	Scarcely any	Average; good	Average	.....	D. Cunningham, Darnaway Castle Gardens, Forrow
NAIRN	Under; bad on standards; average and good on walls	Average; very good	Under; bad	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Under	Alexander Ross, Kilmavock Castle Gardens, Fort George Station
ORKNEY	Under; good	Under; good	.....	Average; good	Over; good	.....	Under; bad	Average; good	.....	Thomas Macdonald, Balfour Castle Gardens, Kirkwall
ROSS-SHIRE	Under	Under	Under	Under	Under	.....	Average	Average	.....	Robert Massie, The Gardens, Ardross Castle
SUTHERLANDSHIRE	Under	Under	Under	Under	.....	.....	Under	Average	.....	D. Melville, Dunrobin Castle Gardens, Sutherland
1, Scotland, E.										
ABERDEENSHIRE	Average	Under	Average	Under	.....	.....	Average; good	Average; good	.....	John Forrest, The Gardens, Haddo House, Aberdeen
	Average	Good	Very good	Good	.....	Bad	Average	Very good	.....	Simon Campbell, The Gardens, Fyvie Castle, Aberdeen
	Under; bad	Under; bad	Under; good	Average; good	.....	Under; bad	Average; good	Average; good	.....	James Grant, Rothie Norman Gardens, Rothie
	Under; bad	Under; bad	.....	Average; good	.....	.....	Under; good	Over; good	.....	John M. Troup, The Gardens, Balmoral Castle, Castle
BANFFSHIRE	Average; under	Average	Average; under	Under average; good	.....	.....	Average; good	Over average; good	.....	W. Jamieson, The Castle Gardens, Balmoral Castle
	Under; good	Under; good	Under walls good standard	Under; Morrells very good	.....	.....	Average; good	Average; good	.....	J. Fraser Smith, Onken Gardens, Onken
BERWICKSHIRE	Under	Under	Under	Under	Under	Under	Average	Average; good	Under	James Gemmell, The Gardens, Ladykirk, Berwick-on-Tweed
	Under; bad	Average; good	Under; bad	Average; good	.....	.....	Average; good	Under; good	.....	Wm. Cairns, The Hiral Gardens, Goldstream
	Under; good	Average; good	Average; very good	Average; very good	Under; good	Under; good	Average; good	Under; bad	.....	James Ironside, Elackadder Gardens, Edrom
CLACKMANNAN-SHIRE	Under; good	Under; good	Under; good	Failure	None grown	None	Average; good	Average; good	None	William Nicholson, Cowden Castle Gardens, Dollar
EAST LoTHIAN	Average	Over	Average	.....	Under	Under	Average; good	Average; good	.....	R.P. Brotherton, Tynninghame, Prestonkirk
	Under	Under	Under	Under	Under	Under	Average; Gooseberries very scarce	Over; good	Average	L. Dow, Newbyth Gardens, Prestonkirk
FIFESHIRE	Under	Under	Under	Under	.....	Under	Average	Average	.....	W. Henderson, Balbirnie Gardens, Markinch
	Under; good	Average; good	Under; good	Average; bad	Under; bad	Under; bad	Average; good	Average; good	.....	William Williamson, Tarvit Gardens, Cupar, Fife
FORFARSHIRE	Average	Under	Under	Average	.....	.....	Average	Average	.....	W. McDowall, Brechin Castle Gardens, Brechin
	Under; good	Average; good	Under; good	Average; good	Over; very good	Under; bad	Over; good	Average; good	.....	Thomas Wilson, The Gardens, Glamis Castle
	Average	Over; very good	Under	Under	Very few grown out-of-doors	Average	Over	Average; very good	.....	William Alison, Seaview Gardens, Monifieth
KINCARDINESHIRE .....	.....	.....	Average	Under	.....	.....	Average	Average	.....	J. M. Cairns, Arbuthnot, Forloun
	Under	Average	Under	Average; very good	.....	Average	Over	Over; very good	.....	William Knight, The Faskae Gardens, Laurencekirk
KINROSS	Under	Under	Under	Under; bad	.....	.....	Under	Under; bad	.....	John Fortune, Gardener, Blaisadam Gardens
MIDLoTHIAN	Average; very good	Over; very good	Average; very good	Under; good	Over; very good	Under; very good	Average; very good	Over; very good	Average; good	Malcolm Dunn, The Gardens, Dalkeith
	Average; good	Under; bad	Under; bad	Under; bad	Average; good	Under; bad	Under; good	Average; good	Average; good	D. T. Fish, 12, Fettes Row, Edinburgh
PeeblesSHIRE	Under	Average	Under	Under	None outside	Under	Raspberries over; Currants and Gooseberries under	Over; good	.....	Wm. McDonald, The Gardens, Cardrona, Peebles
PERTHSHIRE	Average; very good	Average; good	Under	Average; very good	Under	Under	Average; very good	Average; very good	.....	J. Farquharson, Kinfauns Castle Gardens, Perth
	Under	Average	Under	Under	.....	.....	Under	Average	.....	John Robb, Drummond Castle Gardens, Crieff
	Under	Average	Under	Under	.....	.....	Over	Under	.....	George Croucher, Ochertyre Gardens, Crieff
	Under	Average	Average; good	Under; bad	None outside	Under; bad	Average; good	Average; good	.....	James Ewing, The Gardens, Castle Menzies, Aberfeldy
	Under; bad	Under; bad	Under; good	Under; good	.....	Under; good	Average; good	Under; bad	.....	Thos. Lunt, Keir Gardens, Dunblane
	Under; good	Average; good	Over; good	Over; good	Under; bad	Under; bad	Average; good	Average; good	Under; good	A. McKinnon, Seone Palace Gardens, Perth
SELKIRKSHIRE	Under	Under	Under	Under	Under	.....	Under	Average	.....	James Hunter, Kings Knowes, Galashiels
	Under	Under	Under	Under	Average; under	Average; under	Under	Over	.....	Colin Turner, Sunderland Hall Gardens, Selkirk
WEST LoTHIAN	Average; good	Average; good	Under; good	Good	Good	Under; good	Good	Very good	Bad	James Smith, Hopetoun House Gardens, South Queensferry
6, Scotland, W.										
ARGYLLSHIRE	Under	Under	Under	Average	.....	.....	Average	Average	.....	G. Taylor, Castle Gardens, Inverary
	Under; good	Under; bad	Average; very good	Under; good	.....	.....	Average; very good	Under; bad	.....	D. S. Melville, Poltalloch Gardens, Lochgilphead

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
6, Scotland, W.										
ARGYLLSHIRE	Under	Under	Average; good	Under	Under	Average; good	Average	Henry Scott, Torloisk Gardens, Tobermory
AYRSHIRE	Average; very good	Average; bad	Under; bad	Under; bad	Plenty bloss- som; no fruit	Average; very good	Average; very good	Under; bad	D. Buchanan, Bargany Gar- dens, Girvan
BUTESHIRE	Under; bad	Under; bad	Under; bad	Under; good	Under; good	Under; good	Thomas Simpson, Hunterston, West Kilbride
DUMBARTONSHIRE	Under; bad	Under; bad	Under; good	Under	Under	Average	Under	Michael Heron, Mt. Stewart Gardens, Rothesay
DUMFRIES, N.B.	Under; bad	Under; bad	Under; good	Under; good	Under; bad	Under; bad	Over; good	Average; good	Under; bad	George McKeay, Balloch Castle Gardens, Balloch
	Under	Under	Average	Over	Average	Over	D. Stewart, Knockderry Castle, Cove
	Under	Under	Average	Under	Not grown outdoors	Good	Average	Average	David Inglis, Drumlanrig Gar- dens, Thornhill, N.B.
	Average; good	Average; good	Under	Average	Under; good	Average	Average; good	John Urquhart, Hoddum Castle Gardens, Ecclefechan
	Under	Bad	Under	Bad	Very good	Average	R. Wishart, Burnfoot Gardens, Langholm
LANARKSHIRE	Average; good	Under; good	Average; good	Under; good	Under; good	Under; good	Average; good	Over; good	Average; good	J. Mackinnon, Terregles Gdns, Robert Grieve, Carstairs Gar- dens, Carstairs Junction
	Average; good	Under; bad	Average; very good	Average; good	Under; bad	Average; good	Over; very good	James Miller, Castlemilk Gar- dens, Rutherglen
	Average; good	Under; good	Under; good	Under; bad	None outside	Average; good	Average; good	John Methven, Blythwood Gardens, Renfrew
RENFREWSHIRE	Average	Under	Average	Average	Under	Average; over	Average	Thomas Lunt, Ardgowan Gar- dens, Greenock
	Under	Under	Under	Average	Under	Under	Wm. Hutchinson, Eastwood Park Gardens, Giffnock
	Under	Under	Under	Under	Average; good	Over; good	Alex. Orosbie, Buchanan Castle Gardens, Drymen
STIRLINGSHIRE	Under	Under	Average	Average	Average under glass	Under	Average	Average; good	James Masterton, Craigend Castle, Milngavie
	Average; good	Average; good	Average; good	Average; good	None outside; inside ones under	Average; good	Over; good	M. Temple, Carron House, Falkirk, N.B.
	Over	Under	Under	Average	Average; only under glass	Under	Over	Average	John Bryden, Donragit Gar- dens, Donragit
WIGTONSHIRE	Under	Under	Under	Under	Under	Average; good	Average	F. Tilbury, Penninghame Gar- dens, Newton Stewart
	Average; very good	Average	Under	Average; good	Over; very good	Over; good	James Day, Galloway House, Garliestown
	Under	Under	Under	Under; bad	Under; bad	Under	Average; good	Average	Under; bad	
ENGLAND—										
2, England, N.E.										
DURHAM	Under	Under	Under	Under	Under	Over	R. Draper, Seaham Hall, Sea- ham Harbour
	Under	Under	Under	Average	Average	Under; bad	Average	Average	James Noble, Woodburn Gar- dens, Darlington
NORTHUMBERLAND.	Over; very good	Average; good	Under; good	Under	Under; good	Under	Under; good	Average	George Harris, The Castle Gar- dens, Alnwick
	Under; good	Average; good	Under; good	Average; good	Under; bad	Under; good	Over; very good	Average; good	Average; good	George H. Ackroyd, Howick Gardens, Leazes
	Under; good	Over; good	Average; good	Under; good	Under; bad	Under; bad	Average; good	Under; bad	Gardener, Easington Park, Whittingham
YORKSHIRE	Under	Under	Under	Under	Under	Under	Under	Under	Under	J. Riddell, The Gardens, Castle Howard, York
	Under; good	Under; good	Under; bad	Average; good	Average; good	Average; good	Under; good	Over; very good	John McClelland, Ribston Hall Gardens, Wetherby
	Under Moderate	Average Good	Under Bad	Under Below average	Bad Average	Bad Bad	Average Very good	Average Good	Good	Bayley Wadds, Birdswell, York
	Over; good	Under; good	Under	Under	Under	Under	Average; good	Wm. Culverwell, Thorpe Per- row, Bedale, Yorks
	Under	Under	Under	Under	Average	Good	Geo. Batley, The Gardens, Wentworth Castle, Barnsley
	Under; good	Under; good	Under	Average	None outside	Under; good	Average	Average; good	J. Simpson, The Gardens, Wordley Hall
	Under; good	Under; bad	Under; bad	Under; bad	Under; bad	Average; very good	John Easter, Nostell Priory Gardens, Wakefield
	Under	Under	Under	Under	None grown outside	Under	Under, except Raspberries, which are an average crop	Average	Over	Thos. Bonnell, Elmet Hall Gardens, Leeds
	Under	Under	Under	Average	Average	Under	Under	Over	Over	J. Hughes, Wentworth Wood- house Gardens, Rotherham
	Under; good	Under; good	Under; good	Under	Under	Under; good	Under	Average; good	Under	John Allsop, The Gardens, Dalton Hall, Hull
	Under; good	Over; very good	Under; good	Under; good	Under; good	Under; very good	Average; good	Over; good	Over; good	William Chuck, Brodsworth Hall Gardens, Doncaster
3, England, E.										
CAMBRIDGESHIRE ...	Under; good	Average; good	Under; good	Under; good	Under; good	Under; good	R. H. B., Wisbech
	Under	Under	Under	Average	Good		

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
3, England, E.										
NORFOLK	Average; good	Under; bad	Under; good	Average	Under	Average; good	Under; bad	Over; good	Under; good	H. Tedder, Marham Gardens, Downham
	.....	Average	Much under	Thin	Fair	Much under	Currents better than Gooseberries; Raspberries good	Over; good	Over	Wm. Allan, Gunton Park Gardens, Norwich
SUFFOLK	Under; bad	Average; good	Average	Average	Average	.....	Over; good	Over; good	Under	H. Fisher, The Gardens, Flixton Hall, Bungay
	Under	Average; good	Under	Over; good	Average	Under	Over; very good	Over; good	Over	W. Messenger, Woolverstone Park Gardens, Ipswich
	Under	Under	Under	Average	Under	Under	Average	Over	Average	G. W. Eden, Henham Gardens, Wangford
	Under; good	Under	Under; bad	Average; good	Good	Under; bad	Under; good	Over; very good	Over; very good	H. Rogers, Rendlesham Gardens, Woodbridge
	Under	Under	Under	Under	Average	Under	Under	Average	Under	John Wallis, Orwell Park, near Ipswich
	Under; good	Over; good	Under; good	Average; good	Average; good	Average; good	Average; very good	Over; very good	Average	T. Williams, The Gardens, Falmouth House, Newmarket
	Under; bad	Under	Average	Average	Average	.....	Average; good	Average; good	Over; good	B. Marks, Hardwicke Gardens, Bury St. Edmunds
4, Midland Counties.										
BEDFORDSHIRE	Under; bad	Under; good	Under; good	Under; good	Average; good	Under; good	Under	Over; good	Over; Walnuts scarce	G. Ford, Wreat Park Gardens, Ampthill
	Under	Average	Average	Under	.....	.....	Average; good	Over; good	Over	Thos. Hedley, The Gardens, Putteridgebury, Luton
	Under; good	Under; good	Under; good	Under; good	Under; bad	Under; good	Under; good	Average; good	Average; good	H. W. Nutt, Flitwick
	Under	Under	Under	Under	Average; good	Under	Under	Good	Average; good	G. R. Allis, Old Warden Park, Biggleswade
DUCKINGHAMSHIRE	Very bad	Under	Under	Under	Average	Under	Black Currants under; Red average	Good	Under	C. Turner, Cranfield Court, Newport Pagnell
	Uneven; under	Under	Under	Under	.....	Under	Average; good	Average; good	.....	W. Walters, Bulstrode Gardens, Gerrard's Cross, Slough
	Under	Average	Under	Over	.....	.....	Over	Over	Average	John Jaques, Waddesdon, Aylesbury
	Under	Over	Under	Under	Average	Average	Average	Over	Over	W. Hedley Warren, Aston Clinton Gardens, Tring
	Under; bad	Under	Under; bad	Under; bad	Under; bad	Under; bad	Over; good	Over; good	Over; good	George Thos. Miles, High Wycombe
	Under; good	Under	Under	Under; good	Over; good	Under	Average	Average; good	Over	J. Smith, Mentmore, Leighton Buzzard
	Under	Under	Under	Under; Morellos good	Good under glass	Average	Average	Over	Average	Chas. Herrin, Dropmore, Maidenhead
	Under	Average	Failure	.....	.....	Under	Under	Average; wanting in flavour	Over; good	Henry Perkins, Greenlands, Henley-on-Thames
CHESHIRE.....	Under	Failure	Failure	Under	.....	.....	Under	Average; good	.....	G. Bloxham, Brickhill Manor, Bletchley
	Under	Average	Average; Damsons under	Average	Under	Average	Under, except red Currants	Under, and generally small	Average	Robt. Mackellar, Abney Hall, Cheshire
	Average	Average; good	Under	Under	Average; good	Under	Over; good	Over; good	Average	Wm. Whitaker, Crewe Hall, Crewe
	Average	Under	Under	Morellos over	.....	Under	Average	A failure	.....	Charles Flack, Cholmondeley Castle Gardens, Malpas
	Average	Under; bad	Under; bad	Average	.. ..	.....	Average; good	Average; very good	.....	C. Wolley Dod, Edge Hall, Malpas
DERBYSHIRE	Average; good	Average	Under	Under	.....	Under	Average, excepting Gooseberries, much under	Average; good	Under	W. C. Broese, Moreton Hall Gardens, Congleton
	Under	Under	Under	Average	.....	.....	Average; good	Average; very good	Under	T. Keetley, The Gardens, Darley Abbey, Derby
	Under; bad	Under; bad	Under; bad	Under; good	.....	Under; good	Under; good	Over; good	.....	Wm. Elphinstone, Shipley Hall, Derby
	Average; good	Under	Under	Under	.. ..	.. ..	Average; good	Under	Under	Wm. Chester, The Gardens, Chatsworth
HERTFORDSHIRE	Under	Average	Under	Average	Over; good	Under	Over; good	Over; good	Over	E. Wilson, Hardwick Hall, Chesterfield
	Under	Average; good	Under	Under	.. ..	Under	Average; good	Average; good	Over	C. E. Martin, The Hoo Gardens, Welwyn
	Average; very good	Over; good	Under; good	Under; bad	Average; good	Under; good	Average; good	Over; very good	Over; very good, except Walnuts	E. Hill, Tring Park Gardens, Tring
	Under	Average	Under	Under	Average	Under	Average; good	Average; very good	Over; good	J. Turk, The Gardens, Pottersfield, Little Berkhamstead
	Under	Average	Under, except on walls	Dessert kinds bad; Morellos average	Bad	Average	Over	Over; good	Over; good	Thomas Nutting, The Gardens, Childwickbury, St. Albans
	Under	Average	Under	Under	Under	Under	Under	Under	Over	Edwin Beckett, Aldenham House Gardens, Elstree
	Under; bad	Under	Under; bad	Under; bad	Over; good	Under; good	Average; good	Average; good	Under	Wm. Garman, Frythesden Gardens, Gt. Berkhamstead
	Average; very good	Average; very good	Under; good	Sweet, under; Morello average; very good	Under; good	Under	Bk. Currants, under and poor; Red and White, over and very good; Gooseberries under	Over; very good	Filberts over, Walnuts none	Chas. Deane, Cassiobury Park, Watford
LEICESTERSHIRE.....	Under	Under	Under	Average; good	Under	Under	Over; good	Over; good	.....	Geo. Ringham, Wrotham Park Gardens, Barnet
	Under; good	Average; good	Under; good	Under; good	Under	Average; good	Average	Over; very good	Over; good	Alfred Hamshere, Beau Manor Gardens, Loughborough
	Under; bad	Under	Under	Under; bad	Average; very good	Average; good	Under; good	Over; good	Walnuts under	W. H. Divers, The Gardens, Belvoir Castle, Grantham
	Under; bad	Under; good	Under; good	Under; bad	Under; good	Under; good	Average; very good	Under	Average	Daniel Roberts, Prestwold Gardens, Loughborough
NORTHANTS	Under	Under	Under	Under	.....	.....	Under	Under	Under	W. Silk, Rolleston Hall, Leicester
	Under; good	Average; good	Under; good	Under	Under	Under	Average; good	Average; good	Under	W. S. Miller, Whittlebury House Gardens, Towcester
	Under; good	Under; good	Under; bad	Under; bad	Under; bad	Under; good	Under; good	Average; good	Over; good	P. McGredie, Wakefield Lodge, Stoney Stratford
	Under; bad	Average; good	Over; very good	Under; very bad	Under; bad	.....	Over; very good	Over; very good	Average; good	H. Turner, Fineshade Abbey Gardens, Stamford
NOTTINGHAMSHIRE	Under	Under	Under	Under	Over indoors	Under	Over	Over; very good	.....	H. Kempshall, The Gardens, Lamport Hall
										A. Henderson, Thoresby, Newark

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS	NAME AND ADDRESS.
4. Midland Counties.										
NOTTINGHAMSHIRE.	Under; good	Under; good	Under; good	Under; good	Average; good	Average; very good	Average; good	Under; good	Under; good	Amos Parr, Holme Pierrepont Hall, Nottingham
	Under; good	Under	Under; bad	Average; good	.....	Under; bad	Over; good	Average; good	Under	John Lyon, Home Farm, Oasington, Newark
	Under	Over	Under	Average; good	Average	Under	Average; good	Average; very good	Average	Reuben Scott, The Gardens, Osberton Hall, Worksop
OXFORDSHIRE	Under; good	Average; good	Under; bad	Under; bad	Under; bad	.....	Average; good	Average; good	Average	George Stanton, Park Place Gardens, Henley-on-Thames
	Under	Under	Average; good	Average; good; Morellos under	.....	Under	Over; very good	Average; good	Over; Walnuts average	A. G. Nichols, Nuneham Park Gardens, Abingdon
RUTLANDSHIRE	Under; good	Average; good	Under; good	Under; good	Under; bad	Under; bad	Under; good	Average; very good	Over; very good	Geo. Drabble, Ketton Hall Gar- dens, Rutland
	Bad	Under	Bad	Under	.....	.....	Very good	Good	Bad	W. T. Kaines, The Gardens, Cold Overton Hall, Oakham
SHROPSHIRE	Under; good	Under; good	Under; good	Under; good	Under; good	Under; good	Under; good	Under; very good	Walnuts under; others average	James Londen, The Quinta Gardens, Chirk, Ruabon
	Under; falling badly	Average; good	Under	Under	Under	Under	Average	Over; good	Over	A. S. Kemp, Broadway, Shifnal
	Average	Under; good	Under	Under	Under	Under	Over; very good	Average	Over; good	Wm. Weeks, The Gardens, Cheswardine House, Market Drayton
	Average	Average	Under	Average	Under; bad	Under; bad	Average	Average; good	Over	W. Sutton, Hawkstone, Shrews- bury
	Average	Under	Under; bad	Under	Average	Under	Average; black Currants under	Average; small	Filberts aver- age; Walnuts under	Geo. Fearson, Attingham Gar- dens, Shrewsbury
STAFFORDSHIRE	Average	Average	Under	Morello average	Under; bad	.....	Over; very good	Over; very good	Average; good	D. Owles, The Gardens, Apley Castle, Wellington
	Average	Under	Under	Under	Bad	Average	Good	Good	Under	Edward Gilman, Alton Towers Gardens, Stoke-on-Trent
	Under; bad	Under	Under; bad	Bad	Good	Under; bad	Gooseberries good; Curr- ants average; Raspberries average	Average	Good; over	W. Halliday, The Gardens, Patsall Hall, Wolverhampton
	Average; good	Average; good	Under; bad	Average; good	.....	Under	Over; very good	Over; very good	Over; very good	T. Bannerman, Blithfield Gar- dens, Rugeley
	Average; good	Average; good	Under; bad	Average; good	Under	Under; good	Average; good	Average; good	Average	Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent
	Under	Under	Under	Average	Under	Average	Under; Rasp- berries much under	Average; good	Over; good	H. Wilks, Sandon Hall Gar- dens, Stone
	Under; bad	Under	Under	Under	Average	Under; bad	Average	Average	Over; very good	Geo. H. Green, Enville Gardens, near Stourbridge
WARWICKSHIRE	Average; good	Under; good	Under; good	Average; very good	Average; good	Average; good	Over; very good	Under; bad	Over; good	John William Brown, Middle- ton Hall Gardens, Tanworth
	Average; good	Under	Much under average	Average	Average; good	Average; good	Much under average	Over	Filberts over	James Rodger, The Gardens, Charlecote House, Warwick
	Under	Under	.....	Over	.....	.....	Under	Over	Over	W. Miller, Combe Abbey, Coventry
	Over; good	Average	Under	Under	.....	Under	Over; good	Average; good	Over	William Ward, Aston Hall Gar- dens, Sutton Coldfield
	Under	Average; good	Under	Average; good	Average	Under; good	Over; very good	Average; good	Over; good	Henry Thos. Martin, Stoneleigh Abbey Gardens, Kenilworth
	Under; good	Average; good	Under; good	Under; good	Average; good	Under; bad	Over; very good	Average; very good	Over; very good	A. D. Christie, Ragley Gardens, Alcester
5. Southern Counties										
BERKSHIRE	Under	Under	None	Average; very good	Average; very good	Average; good	Under	Average; very good	Average	O. Thomas, Royal Gardens, Windsor
	Under	Average	Under	Under	Under	Under	Over	Over	Over	Robt. Fenn, Sulhamstead, near Reading
	Under	Under	Under	Under	Under	.....	Average; good	Over; very good	Walnuts under Average	Jas. Strachan, Rosehill House Gardens, Henley-on-Thames
	Under; bad	Under	Under	Under	Average	Under	Average	Average	Average	J. Howard, Benham Park Gar- dens, Newbury
	Under	Under	Under	Under	Under	Under; bad	Average; good	Over; very good	Under	T. Turton, Maiden Erlegh Gar- dens, Reading
	Under	Average	Under	Under	Under	Under	Good	Good	Good	A. J. Long, Wyfold Court Gardens, Reading
	Under	Under	Under	Under	Under	Under	Good	Good	Walnuts under Average	W. Fyfe, Lockinge Gardens, Wantage
	Under	Average	Under	Average	Over	Average	Over	Over	Under	Fred. J. Thorne, Sunningdale Park, Ascot
DORSET	Under; good	Under	Under	Under	.....	Under; good	Over; very good	Over; very good	Over; very good	Thos. Denny, Down House Gardens, Blandford
HAMPSHIRE	Over; good	Average	Under; bad	Under	Average; good	Average	Average; very good	Average; good	Over	G. W. Goblin, Bitterne Park, Southampton
	Under; good	Under; good	Under; good	Good	Average	.....	Over; good	Average; good	Over; very good	E. Molyneux, Swanmore Park Gardens, Bishop's Waltham
	Average; good	Under; very good	Under; good	Average; good	Under	Average; good	Over; very good	Average; good	Under	S. Heaton, Horticultural In- structor, Newport, I.O.W.
	Under	Average	Under; bad	Average	Average	Under	Bad	Over; very good	Over; very good	James Wasley, Sherfield Manor, Basingstoke
	Under; good	Average; good	Under; bad	Under; good	Average; good	Average; good	Under; good	Average; good	Over	W. Pope, The Gardens, High- clere Castle, Newbury
	Under	Over	Under	Average	Average	Average	Average	Average	Average; good	William Smythe, The Gardens, Basing Park, Alton
	Under	Under; good	Under	Average; good	Average; good	Under; good	Average; good	Over; very good	Average; good	J. W. McHattie, Strathfield- saye, Mortimer, R.S.O.
	Under; bad	Under; good on walls	Under; bad	Average; good	Average; good	Average	Over; very good	Average; good	Under	Arthur Lee, Palace House Gar- dens, Beaulieu, Southampton
	Under; very small	Under	Under	Under	Average	Under; bad	Over; good	Over; very good	Over	J. Bowerman, Hackwood Park, Basingstoke
KENT	Under	Under	Under	Under; good	Average; good	Under; bad	Over; very good	Over; very good	Over; very good	H. Wilson, Mereworth Castle Gardens, Maidstone
	Under	Under	Under	Under	Under	.....	Average	Average	Over	Geo. Woodward, The Gardens, Barham Court, Maidstone
	Under	Average; good	Under	Under	Under	.....	Average; good	Average; good	Over; good	H. Elliott, Wilderness Gardens, Sevenoaks
	Under; very good	Under; bad	Under; good	Under; bad	Under; bad	.....	Under; good	Over; bad	Over; very good	Fred. Smith, Loddington, Maidstone
	Under; bad	Under; bad	Under; bad	Average; good	Under; good	.....	Over; very good	Over; very good	Filberts aver- age; Walnuts total failure	Geo. Abbey, Junior, Avery Hill Gardens, Eltham
	Under	Under	Under	Under	Average	Under	Under	Under	Over	George Bunyard, Royal Nur- series, Maidstone
	Under	Under	Under	Average; very good	Under owing to blister	Under	Over; good	Over; very good	Average	J. Stubbs, Knole, Sevenoaks

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
5, Southern Counties.										
KENT	Under; good	Under; good	Under	Average on walls; good	Average	Under	Average; good	Average; good	Average	H. Markham, Northdown, Margate
	Under; bad	Over; good	Under	Average	Under	Under	Over; very good	Over; very good	Over; very good	Geo. Hutt, Lullingstone Castle, Dartford
	Under	Average	Under	Under	Average	Average	Under	Under	.....	F. Moore, The Gardens, Blen- don, Bexley
	Under	Under	Under	Under; good	Average	.....	Over; very good	Over; very good	Average	Wm. Lewis, East Sutton Park, Maidstone
	Under	Under	Average	Under	Average	.....	Average	Over; good	Over; good	Geo. Pennell, The Gardens, Fairlawn, Tonbridge
	Under; very good	Under	Under; good	Under; bad	.....	.....	Under; good	Over	Over; very good	Champion Bros., Borough and Covent Garden Markets, and Mereworth, Maidstone
MIDDLESEX	Under; good	Under; good	Under	Over; good	Over; good	Under; good	Average; good	Over; very good	Under	Geo. Wythes, Syon Gardens, Brentford, W.
	Over; good	Average; good	Under	.....	Average	.....	Average; good	Average; good	Under	John Turner, The Gardens, Fulham Palace, S.W.
	Average	Under	Under	Under	Average; good	Average	Under	Over; good	.....	William Bates, Cross Deep Gardens, Twickenham
	Under	Under; good	Under; bad	Average	Average; very good	Under	Under	Average	Over; good	J. T. Wright, R. H. S. Gardens, Chiswick, W.
	Under; good	Next to none	Under	Fair	Fair	Under	Average	Good Crops	Average	W. Watson, Harefield Place, Uxbridge
	Under; good	Under; good	Total failure	Average; very good	Average; good	.....	Average; good	Over; very good	.....	James Hudson, Gunnersbury House Gardens, Acton, W.
	Under	Under	Under	.....	Under	Average	Over	Over	Under	Robert Cronk, Cranford House, Cranford, Hounslow
	Under	Average	.....	Average Morellos	Average	Under	Over; very good	Over; very good	Average	W. Ripley, The Gardens, Harrow Weald House, Har- row Weald
	Under	Under	Under; bad	Under	Average; good	Average; good	Average; good	Over; very good	Average	John W. Odell, The Grove, Stammore
SURREY	Under; good	Under; good	Scarcely any	Under	Average; good	Under	Average; good	Average; good	Under	A. Dean, Kingston-on-Thames
	Under	Under	Under	Average	Over	Average	Average	Average	Over	St. Burrell, Claremont, Esher
	Under; good	Under; good	Under; good	.....	.....	.....	Average; good	.....	.....	James Walker, Ham, Surrey
	.....	.....	.....	Under	Under	Under	Gooseberries over; Raspberries over, very good; Currants under	Average	Average	A. Evans, 1, 3 the Hill, Hasle- mere
	Under; good	Under; good	Under	Under; good	Under; good	Under; good	Over; good	Over; good	Over good	G. W. Cummins, The Orange Gardens, Wallington
	Over; very good	Average; good	Under; bad	Under; good	.....	.....	Average; good	Over; very good	.....	J. F. McLeod, Dover House Gardens, Richmond
	Under; good	Under	Under	Under	Average; good	Average; good	Average; very good	Under, but good	Average	Thomas Osman, Ottershaw Park Gardens, Chertsey
	Under; good	Under; good	Under; bad	Under; good	Average; good	Average; good	Average; very good	Average; good	Over; very good	J. Halsey, Riddings Court, Cateham
	Under; good	Under	.....	Morellos under	.....	.....	Raspberries average, good; Gooseberries under; Black Currants under; Red ditto under Average	Average; good	Under	C. J. Salter, Woodhatch Lodge Gardens, Reigate
	Under	Under	Bad	.....	.....	.....	.....	Over; very good	Average	W. Bain, Burford, Dorking
SUSSEX	Under	Under	Bad	Very good	Very good	Bad	Over	Over	Over	J. Miller, Ruxley Lodge, Esher
	Under	Under	Under	Average on walls	Average	Under	Average	Under	Average	F. Geeson, Cowdray Park Gar- dens, Midhurst
	Average; good	Over	Average; very good	Under; bad	Under	Average	Over; very good	Average; good	Over; good	Arthur Wilson, Eridge Castle Gardens, Tunbridge Wells
	Under	Average	Under	Under	Under	.....	Average	Under	Average	Alex. Reid, Jun., Posingworth Gardens, Cross-in-Hand
	Under; good	Under; fair	Under; fair	Average; good	Under; bad	Over; good	Red Currants average, Black over, Rasp- berries over, Gooseberries under	Under; fair	Cobs and Fil- berts good; Walnuts bad	H. C. Princep, The Gardens, Buxted Park, Uckfield
	Under	Under	Failure	Under; good	Average	Average	Average; good	Over; good	Over	E. Burbury, Castle Gardens, Arundel
	Average	Under	Under	Under	Over; good	Average	Over; good	Average; good	Average	W. H. Smith, West Dean Park Gardens, Chichester
	Under	Average	Under	Average	Over	.....	Average	Over	Over	Thomas Glen, Worth Park Gar- dens, Crawley
	Under; very good	Under; bad	Under; bad	Average; good	Over; good	.....	Over; good	Average	Average; good	W. Brunsden, Brambletye Gar- dens, East Grinstead
	Under; good	Average; good	.....	Average; good	Over; very good	Under; good	Average; good	Average; small	Average; good	Richard Parker, Goodwood Gardens
	Under	Under	Under	Average	Average	.....	Over; very good	Over; very good	Over	George Duncan, Warnham Court, Horsham
	Average	.....	Under	Under	Average	.....	Average	Average	Over	G., Uckfield
WILTSHIRE	Under	Under	Under; bad	Under; bad	Under; bad	Under; bad	Under	Average	Average	Robert Aitken, East Lodge, Beaulieu, St. Leonards-on-Sea
	Under; bad	Under; bad	Under	Under	Average; small	.....	Average; good	Average; very good	Average	Thomas King, Castle Gardens, Devizes
	Under; bad	Under; bad	Under; bad	Under; good	Over; very good	Average; good	Under; good	Average; good	Over; good	Josiah Trollope, Longleat Gar- dens, Warminster
	Under	Average	Under	Under	Average	Under	Average	Under	Over; good	F. Challis, The Gardens, Wilton House, near Salisbury
	Under	Average	Under	Under	Under	Average	Average	Average	Average	A. Rushant, Savernake Gar- dens, near Marlborough
	Under	Under	Under	Under	Average	Under	Over; good	Over; very good	Average	George Brown, Bowood Park Gardens, Calne
	Under	Under	Under	Under	Average	Under	Over; good	Over; very good	Average	William Nash, Badminton Gar- dens, Chippenham
7, England, N.W.										
CUMBERLAND	Under	Under	Under	Under	None grown outdoors	Under	Average; good	Over; very good	.....	Little & Ballantyne, Carlisle
	Bad	Bad	Bad	Average	.....	Bad	Good	Under	.....	William Castle, Low House, Armthwaite
LANCASHIRE	Average; good	Under; good	Under; bad	Average; good	.....	.....	Average; good	Average; good	.....	W. P. Roberts, The Gardens, Cuerdon Hall, Preston
	Average; very good	Under; good	Under	Average; good	Over; very good	.....	Average; very good	Average; very good	Average; good	Ben. Ashton, Lathom Park Gardens, Ormskirk
	Under; bad	Under; bad	Under; bad	Under	.....	.....	Under; good	Under; good	.....	A. E. Peach, Trafford Park Gar- dens, Manchester

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
7, England, N.W.										
LANCASHIRE	Average	Under	Under	Under	Bad	.....	Under	Average	Under	James Shaw, The Gardens, Ashton Hall, Lancaster
	Over; very good	Average	.....	Under	.....	Average	Under; bad	Under; bad	.....	Robert Doe, Knowsley Hall Gardens, Prescott
	Average	Under	Under	Under	.....	.....	Under	Average	.....	W. B. Upjohn, Worsley Hall Gardens, Worsley, Man- chester
WESTMORELAND	Average; good	Under; good	Under	Under	.....	.....	Average; good	Average; good	Under	W. A. Miller, Underley Gar- dens, Kirkby Lonsdale
	Under	Average	Under	Under	.....	Under	Average; good	Over; good	None grown	Frederick Clarke, Lowther Castle Gardens, Penrith
	Average; good	Under; good	Under; good	Under; bad	Under; good	.....	Over; very good	Over; very good	.....	William Gibson, The Gardens, Leven's Hall, Milnthorpe
8, England, S.W.										
CORNWALL	Average	Under	Under	Under	Under	Under	Currants over, good; Goose- berries under	Average; good	.....	W. H. Bennett, Menabilly, Par
	Under	Under	Under	Morellos under	Under	.....	Under	Over	.....	A. Mitchell, Tehidy Park, Cam- borne
	Average; good	Under; good	Under; good	Under; good	Over; very good	.....	Under; good	Over; very good	Average; good	Alfred Read, Port Elliot Gdns., St. Germans, R.S.O.
	Under; good	Under; good	Under; bad	Under; bad	Under; bad	Under	Over; good	Over; good	Average; good	Chas. Page, Bocomnoc Gardens, Lostwithiel
	Under	Under	Under	.....	Under	.....	Under	Under	.....	William Sangwin, Trellasick, Truro
DEVONSHIRE	Average; good	Under	Under	Under	Under	Under	Over, good, especially Raspberries	Over	Average; good	James Enstone, 38, Temple Road, Exeter
	Under; good	Under; good	Under; good	Under; good	Average; good	.....	Average; good	Under; bad	Average; good	Alfred Baines, Henton Satch- ville Gdns., Dolton
	Average; good	Under	Under	Under	.....	Under	Average; good	Average; very good	Under	W. Swan, Bystock, Exmouth
	Average	Under	Bad	Under; bad	Under	.....	Average	Good	Good	Geo. Baker, Membland, near Plymouth
	Average; very good	Under; good	Under; good	Under; good	Under; good	Under; good	Over; very good	Over; very good	Over; very good	James Mayne, Bickton Gardens, Budleigh Salterton
GLOUCESTERSHIRE	Average	Average	Under	Under	Average	Under	Average	Over	Average	John Sowray, The Gardens, Highnam Court, Gloucester
	Average	Average	Under	Under	Average	Under	Average	Under	Over	Win. Keen, The Gardens, Bow- den Hall, near Gloucester
	Under	Under	Under	Morellos average	Under	Under; bad	Average; good	Average	Over	Richard Shore, Berkeley Castle Gardens
	Average; good	Bad	.....	Morellos aver- age; good	Average; good	.....	Over; good	Over; good	Walnuts under; Fil- berts over	George P. Bound, King's Weston Gardens, Bristol
	Under; bad	Average; good	Under; bad	Under	Average; very good	Under	Over; very good	Over; very good	Over; very good	Thomas Shingle, The Gardens, Tortworth, Falfield
	Under; very good	Under; good	.....	Under; good	Average; good	Under; good	Over; good	Over; good	Over; very good	G. W. Marsh, The Gardens, Arle Court, Cheltenham
HEREFORDSHIRE	Under; good	Under; good	Under; good	Failure	.....	.....	Over; very good	Average; good	Over; good	John Watkins, Pomona Farm, Withington, Hereford
	Average; good	Under; good	Under; good	Under; good	.....	Under	Average; good	Average; good	Over; good	Thos. Spencer, Goodrich Court Gardens, Ross
	Under; good	Average; good	Under; good	Average; good	.....	.....	Over; good	Average; good	Over; good	Geo. Milne, Titley Court Gar- dens, Titley
	Over; very good	Average	Under	Under	Under	Under	Average; good	Average; good	Over; good	C. A. Bayford, Glewstone Gar- dens, Ross
	Under; good	Average; good	Under; good	Average; very good	Under; bad	Under; bad	Over; very good	Average; very good	Over; good	Joseph Russell, Berrington Hall Gardens, Leominster
MONMOUTHSHIRE	Under; good	Under; good	Under; good	Under; good	Under	Average; good	Average; very good	Average; very good	Over	Thos. Coomber, The Hendre Gardens
	Under; good	Average; very good	Under; bad	Under; good	Over; very good	Average; good	Over; very good	Over; very good	Over	W. F. Woods, Llanfrehâ Grange Gardens, Caerleon
	Under	Under	Failure	Under	Average	.....	Average; good	Average	Average	John Lockyer, Pontypool Park, Pontypool, Mon.
SOMERSETSHIRE	Under	Under	Under	Average	Under	Average	Average	Average	Under	W. Hallett, Coastington House Farm, Bridgwater
	Average; good	Under; good	Under; good	Under; bad	Average	Under	Average; good	Average; good	Over; very good	Thos. Wilkins, The Gardens, Inwood House, Henstridge
	Under; good	Under; good	Under; good	Average; good	Average; good	Under; good	Average; good	Average; smaller than usual	Over; good	A. Young, Marston House Gardens, Frome
	Under; good	Under; good	Under; good	Average; good	.....	Under; good	Average; good	Under; bad	Bad	John Crook, Forde Abbey Gar- dens, Chard
	Average	Under	.....	Under	Average; good	Under	Over; very good	Over; very good	Over	H. Noble, The Gardens, Ashton Court, Clifton
WORCESTERSHIRE	Under; good	Under; good	Under	Under	Over; good	Average; good	Over; good	Over; good	Over; good	A. Young, Witley Court Gar- dens, Stourport
	Average; very good	Average; good	Under	Average; good	Average	Average; very good	Over; very good	Over; very good	Average; good	Frank Hughes, Overbury Court Gardens, Tewkesbury
	Under	Average	Average	Under	Average	Average	Over	Average	Over	John Justice, The Naah Gar- dens, Kempsey
	Under; good	Average; good	Under	Morellos aver- age; good	Over; very good	Over; very good	Over; good	Over; very good	.....	Jno. Masterson, Weston House Gardens, Shipston-on-Stour
	Under; very good	Average; very good	Under; bad	Under; bad	Average; bad	Under; good	Average; good	Over; very good	Over; very good	William Crump, Madresfield Court Gardens, Malvern
WALES—										
ANGLESEY	Under; good	Under; good	Under; good	Under; good	.....	.....	Average; very good	Average; very good	.....	K. Wright, Gardens, Plas Newydd, Llanfair, P.G.
	Average; good	Average; good	Under; good	Under; very good	Average; very good	.....	Average; good	Average; very good	.....	F. W. Everett, Penrhos Gar- dens, Holyhead
BRECONSHIRE	Under	Average	Under	.....	Average	Under	Over; very good	Average; good	.....	D. Clark, Clyso Court Gar- dens, Clyso
	Under	Under	Under	Average	Under	Under; very good	Average; good	Average; good	.....	Albert Ballard, Glanusk Park Gardens, Crickhowell
	Under; good	Under; good	Under; bad	Average; good	Average; very good	.....	Average; good	Average; very good	Average; very good	Constantine Hibbert, Craig-y- nos Castle Gardens
CARMARTHENSHIRE	Average; bad	Under	Under	Average	Under	.....	Average	Average	Average	Lewis Bowen, Edwinsford Gardens, Llandilo
	Average	Under	Under	Average	Under; bad	Under	Average	Average; very good	.....	A. Richardson, Dynevor Gar- dens, Llandilo
CARNARVONSHIRE	Under	Under	Under	Under	Under	Under	Average	Average	.....	Allan Calder, Vaynol Park Gar- dens, Bangor, N. Wales
	Under	Under	Under	Average	.....	.....	Under	Average	.....	Thos. Evans, Gwydyr Gardens, Llanrwst
DENBIGHSHIRE	Over; very good	Over; very good	Average; good	Over; very good	Average; good	Average; good	Gooseberries under; Currants over, good	Over; very good	Filberts over, good; Walnuts bad	Fredk. Fairbairn, Wynnstay Gardens, Ruabon

CONDITION OF THE FRUIT CROPS—(Continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
WALES—										
DENBIGHSHIRE.....	Under Average	Under Very good	Under; bad Fair	Average Average	Over; good	Under Late frosts damaged crops	Under Under average owing to late frosts	Very good Very good	Average Good	Walter Weir, Acton Park Gar- dens, Wrexham Henry Forder, Rethin Castle Gardens, Rethin
FLINT	Under Under	Under Average	Bad Under	Bad Average	Under	Average Under	Under Under	Very good Average	Good Average	John Forsyth, Hawarden Castle, Flintshire J. Barnard, Mostyn Hall Gar- dens, Mostyn
GLAMORGANSHIRE...	Average; good Under	Under; good Under	Under Under	Under Average	Under; bad Over	Under Under	Over; good Average	Over; good Average	Average Over	R. Milner, Penrice Castle Gar- dens, Swansea J. Muir, Margam Park Gar- dens, Port Talbot
	Average	Under	Failure	Failure	Average	.....	Average; good	Average	Average	W. Bennett, Talygarn Gardens, Llantrissant
	Average	Under	Average	Under	Under	.....	Under	Average	Average	A. Blanchett, Dunraven Castle Gardens, Bridgend
MERIONETHSHIRE...	Average; good	Under; good	Under	Under	.....	Under	Under	Over; good	Over	J. Bennett, Rhug, Corwen
MONTGOMERYSHIRE	Under; good	Average; good	Under; bad	Under	Under	Under	Average; good	Average; good	Average	John Lambert, Powis Castle, Welshpool
PEMBROKESHIRE.....	Average	Under; bad	Bad	Under	.....	.....	Good	Good	Average	Geo. Griffin, Slebeck Park Gar- dens, Haverfordwest
	Under	Under	Under	Under	Average	.....	Average; Gooseberries under very good	Average; good	Average	W. B. Fisher, Stackpole Court, Pembroke
RADNORSHIRE	none	next to none	Under; bad	Under; bad	Under; bad	none	.....	Average; very good	Average	S. Dickson, Bullbrook Gar- dens, Presteign
IRELAND—										
9, Ireland, N.										
ANTRIM	Under; bad	Under; bad	Under; bad	Under; bad	.....	.....	Average; very good	Average; very good	.....	Geo. Porteous, Garron Tower, Larne
CAVAN	Under	Under	Under	Under	Not grown out-of-doors	Not grown out-of-doors	Average	Under	.....	Edward Reilly, The Gardens, Castle Sanderson, Belurbet
DOWN	Under	Average; good	Under	Under	.....	.....	Gooseberries under; Red and Black Cur- rants over; Raspberries average; good	Average	.....	Thos. Ryan, Castlewella
	Under	Under	Under	Under	.....	.....	Average	Average	.....	Jas. Taylor, Mount Stewart, Newtownards
DUBLIN	Under	Under	Under	Under	Under; bad	Average	Average; good	Over; good	Under	James Patterson, Malahide Castle Gardens, Malahide
	Under	Under	Under	Under	Under	Under	Average	Over	.....	3. Smith, Vice-Regal Lodge Gardens
GALWAY.....	Under; good	Under; bad	Under; good	Under; bad	.....	.....	Average; good	Average; very good	.....	John Cebian, Garbally Gar- dens, Ballinasloe
LIMERICK	Under	Under	Under	May Duke over; others under	.....	.....	Over; good	Over; good	Under	R. Blworthy, Orom Castle Gardens, Newtown Butler
KERRY	Under	Under; bad	Under; bad	Under; bad	.....	.....	Average	Over; very good	.....	John H. Kemp, Dromore, Keshmore
	Under	Under	Bad	Bad	Bad	Bad	Very good	Bad	Good	Geo. M. Breese, Killynery House Gardens, Killynery
LONGFORD	Under	Under	Average	Under; bad	.....	.....	Under	Average	Average	J. Rafferty, Castleforbes, New- ton Forbes
MAYO	Under	Good	Under	Bad	Under	.....	Very good	Very good	Good	Patrick Connolly, Cranmore House Gardens, Ballinrobe
MEATH	Under; good	Under; bad	Under; good	Under; good	Under; bad	Under	Average; bad	Under; bad	Bad	James Hounslow, Headfort House Gardens, Kells
SLIGO	Average; good	Under; bad	Under; good	Average; good	Over; very good	Over; very good	Over; very good	Over; very good	Average; good	James E. Dawson, Lisadell Gardens
WESTMEATH	Average; very good	Over; very good	Under; good	Under; good	Average; good	.....	Under; good	Over; very good	Average; very good	Robert Anderson, Waterstown Gardens, Athlone
WICKLOW	Under	Under	Under	Under	Under	Under	Average; good	Good	Average	D. Crombie, Powerscourt Gar- dens, Bray
10, Ireland, S.										
CLARE	Under	Under	Under	Under	Under	.....	Average	Over	Under	J. H. Carter, Dromoland Castle Gardens, Newmarket-on- Fergus
CORK	Average	Under	Very few	.....	Under	.....	Under	Over; good	Average	R. J. Wilson, Mitchelstown Castle Gardens, Mitchelstown
KILDARE	Under	Under	Under	Under	Under	Under	Over; very good	Over; very good	.....	J. Wyke, Bishop's Court Gar- dens, Straffan
	Under; good	Under	Under	Under	.....	.....	Over; good	Over; good	Elberts over; good	Frederick Bedford, Straffan House, Straffan Station
KILKENNY	Under; good	Under; bad	Under; very bad	Under; good	.....	Average; good	Average; good	Average; good	Under; bad	H. Carlton, Kilkenny Castle Gardens, Kilkenny
KING'S CO.....	Under; good	Under; poor	Under; good	Under; bad	Quite a failure	.....	Currents aver- age; good	Over; very good	Average; good	F. J. Hart, Blir Castle Gar- dens, Parsonstown
LIMERICK	Under	Under	Under	.....	Under	Under	Under	Over; very good	.....	J. Ellicott, Summerville Gar- dens, Limerick
ROSCOMMON	Average; good	Under; bad	Under; bad	Average; bad	Average	.....	Average; good	Average; good	Under	Terence Rogers, Frenchpark House Gardens, Frenchpark
TIPPERARY	Under; bad	Average	Over; good	Average	Average	.....	Over	Over; very good	Over; very good	Michael Dixon, Grove Gardens, Fethard
WATERFORD	Good	Average	Under; bad	Average	Average; good	Average	Currents and Raspberries over; good. Gooseberries under; bad	Very good	.....	T. Dunn, Stranally Castle Gardens, Villierstown
	Average	Under; bad	Under; bad	Under	Under	Under	Average	Very good	.....	Thos. Singleton, Curraghmore Gardens, Portlaw
CHANNEL ISLANDS.										
GUERNSEY	Under	Under	Under	Under	Under	Under	Under	Under	.....	C. Smith & Son, Cañlonia Nursery, Guernsey
JERSEY	Under	Under	Under	.....	Under	.....	Average	.....	.....	Mr. J. Nichol, La Carrière Gar- dens, St. Martin
	Under	Under	Under	Under; good	Under	Under	Average; good	Over; good	.....	E. Becker, Cessarea Nurseries, St. Saviour's
	Average; good	Under; very good	Under; good	Under; good	Under; good	Under; bad	Average; very good	Average; very good	.....	A. Ashford & Son, The Nur- series, St. Heliers
ISLE OF MAN.....	Under; good	Under	Under	Under	.....	.....	Average; good	Over; very good	.....	James Murphy, Cronkbourne Gardens, Douglas
	Average	Under	Under	Average	Under	.....	Average; good	Over; good	.....	James Inglis, The Nunnery House, Douglas

THE GHENT QUINQUENNIAL.—In addition to the prizes mentioned in the programme recently distributed, it is now announced that the Count DE GERMINY has offered a prize of 500 francs for a collection of 100 exotic Orchids, comprising the species and varieties of the greatest importance from a horticultural point of view. In memory of the late Count CHARLES DE KERCHOVE DE DENTERGHEM, formerly President of the Society, a prize is offered for the most remarkable collection of 100 annual or biennial hardy or greenhouse plants in flower. M. K. FIERENS, 135, Coupure, Ghent, is the Secretary, to whom letters of enquiry should be addressed.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The monthly meeting of this Society was held at 25, Westgate Road, on Tuesday last. Mr. JOHN BULLOCK occupied the chair. Mr. JAMES JEFFREY, of Oakwood, read a very instructive paper on the "Cultivation of the Carnation." Confining his remarks entirely to indoor culture, Mr. JEFFREY dealt with this most popular subject in a very practical manner. An excellent discussion followed, in which most of the members took part.

ISLE OF WIGHT.—The Horticultural Exhibition, held in connection with the Isle of Wight Agricultural Society, was held at Ryde on Wednesday and Thursday, July 21 and 22. Both days were showery,

TOTTENHAM AND EDMONTON CHRYSANTHEMUM SOCIETY.—The annual outing of the members of the Tottenham and Edmonton Chrysanthemum Society and their friends took place on Tuesday last week, when, by the kind permission of the Marquis of SALISBURY, upwards of sixty journeyed by brake or train to the grounds of Hatfield Park, which, together with the house, was thrown open for the inspection of the visitors.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY FLORAL COMMITTEE.—At the meeting on July 10, 1897, the Committee awarded First-class Certificates to Mr. C. G. Tubergen, jun., of Haarlem, for *Calochortus clavatus*; to the Gardening School of

Joh. van den Berg & Son, of Amsterdam, for *Russelia juncea*. Botanical Certificates to Messrs. de Graaff Bros., of Leiden, for *Conanthera bifolia* and *Gladiolus quadrangularis*. Votes of Thanks to the Gardening School of Frederiksoord, for *Antirrhinum majus écarlate vif*; to Mrs. J. H. Schöber, of Putten, for *Bifrenaria aurantiaca*; to Mr. C. W. R. Scholten, jun., of Amsterdam, for *Cattleya Eldorado alba*; to Mr. J. G. Ballego, of Leiden, for *Vanda Denisoniana*; to Messrs. Joh. van den Berg & Son, of Amsterdam, for *Vincetoxicum rosea*. H. C. Zwart, the General Secretary, Amsterdam, July, 1897.

IMPORTATIONS OF FOREIGN FRUIT.—At the "Lord Mayor's Feast" last November, certain high-class and scarce fruits graced the principal table. So



FIG. 21.—SOUVENIR DE LA MALMAISON CARNATIONS AT DOVER HOUSE, ROEHAMPTON. (SEE P. 72.)

which materially affected the attendance and the pleasure of the visitors. The exhibits were not so many as last year, but they were of average quality. One of the chief features of the show was the table decorations, which were very good, and had many mirrors. Mr. J. O. BROOK staged excellent Pompon dahlias. The other principal exhibitors were Messrs. RIST, KENT, PINCE, LEAK, and GOBLE; the latter received the Isle of Wight Horticultural Improvement Association Certificate for Cultural Merit, for blooms Carnations.

THE MIDLAND CARNATION AND PICOTEE SHOW will be held at Edgbaston Botanical Gardens on August 5 and 6, as originally fixed, and not as stated in your last issue. Your prompt correction will be much obliged, Robt. Sydenham.

Frederiksoord, for *Chrysanthemum maximum* Perfection, and *Centaurea macrocephala*; to Messrs. Gratama Bros., of Hoozeveen, for *Rosa x bifera* Capt. Hayward; to Mr. G. A. van Rossem, of Naarden, for *Rosa indica* nois. Madame Pierre Cochet; to Mr. Jac. Smits, of Naarden, for *Rosa indica* nois. Madame Pierre Cochet, *Rosa François Dubreuil*, *Rosa Mrs. R. G. Sharman Crawford*, and *Rosa Souvenir de Catherine Guillot*. Certificates of Merit to Messrs. de Graaff Bros., of Leiden, and to Messrs. E. H. Krelage & Son, of Haarlem, for *Astilbe Lemoinei* Gerbe d'Argent, A. L. Panache, and A. L. Plumet neigeux; to the Gardening School of Frederiksoord, for *Begonia versallensis* and *Myosotis palustris* Nixen Auge; to Mr. H. D. Willink van Collen, of Breukelen, for *Centaurea babylonica*; to the Botanical Garden of Groningen, for *Cirsium Velenowskyi*; to Messrs.

highly spoken of were these far-eastern products, that it was proposed to extend their importation into this country; but as time went on the project died out, and though probably isolated specimens of these fruits will doubtless again be seen at City and other feasts, they will continue to be "fruits to be desired." But now the Board of Trade has established a committee to inquire into the "what" and "how" relating to foreign imports and exports coming under the notice of our Consular agents abroad and Chambers of Commerce, we venture to suggest that for the wealthy at home there are many fruits abroad inviting the kindly offices of the importer and salesman, to which the attention of the Fruit Committee of the Royal Horticultural Society might profitably be directed. It would be an easy matter to get into touch with the officials of the Board, and it might be

found profitable for that committee to invite the attention of the fruit trade, here and elsewhere, to the desirability of, at any rate, ventilating the subject of encouraging the importation of foreign fruits now notable by their absence from the British table. It may be suggested that such an enquiry will cost but little, and that results might be profitable all round. However, we have thought it our duty to give the subject prominence in our columns, and will be glad to report such results as may be achieved.

"THE A. B. C. OF ROSE CULTURE."—This little brochure is by Mr. EDWARD MAWLEY, the well-known secretary of the National Rose Society (S. P. C. K., Northumberland Avenue, W.C.), and is one of a series of "Helpful Hints for Hard Times," each published at the same low price, and devoted to the practice of horticulture. It is not only from a pecuniary point of view that the Rose-grower need be interested in these hints, which are quite as applicable to amateurs, whose reward is in the health and beauty of their plants. The instructions are clearly and plainly given, serving either as an introduction to the novice, or a handy epitome for the more experienced grower. The author begins with the work of the first year, in preparing and planting; proceeds to make mention of the best varieties, and gives instructions how to protect, prune, and otherwise manage them, both when newly set, and in subsequent seasons. All this information is classified well, and is reliable, and the little book should have many admirers.

"WORN OUT."—Mr. HENRY STEVENS, so favourably known by his fine photographs of Orchids, has extended the scope of his photographic labours, and, as we noted at the time, succeeded in obtaining the first position, among many thousands, in a competition initiated by the *Graphic*. His picture "Worn out" is almost painfully realistic; but as a photograph it surpasses anything we have seen. Copies have been accepted by the QUEEN and PRINCESS OF WALES, and exquisite photogravure reproductions can be purchased either on India-paper or as ordinary prints from Mr. STEVENS, King Street, Covent Garden.

"RAY LANKESTER."—Mr. E. J. LOWE obligingly sends flowers of a herbaceous Chrysanthemum thus named, and which was raised between the common or Eye Daisy, Chrysanthemum Leucanthemum, and C. atratum. The flower-heads are larger than in either parent, and there is a double row of ray-florets, each ray being more or less completely divided into its component parts; the ray-florets, in fact, are more or less lacinated. Judging from the flower sent us, the hybrid would be a valuable addition to the flower-border. Lacination, or rather partial separation of the petals, is not of very rare occurrence in Chrysanthemums, or, indeed, in Composites generally. It is interesting to see that it is brought about by hybridisation.

ROYAL APPOINTMENT.—Mr. HENRY GEORGE SMYTH, of Goldsmith Street, Drury Lane, has been appointed by royal warrant horticultural sundriesman to Her Majesty. This, we believe, is the first appointment of the kind which has been made.

"ILLUSTRATED FLORA OF THE NORTHERN UNITED STATES, CANADA, ETC."—The second volume of this useful book has lately been issued. It is published in New York by CHARLES SCRIBNER'S SONS, and may be had of any foreign bookseller. Those concerned with hardy herbaceous plants will find the book of great use to them, as in addition to authentic descriptions, there are small woodcut illustrations. The arrangement of the orders is unfamiliar to British botanists, but is one that is gaining ground. In any case, the carefully-prepared index obviates any inconvenience from unfamiliar arrangement or even vagaries of nomenclature.

THE PHIPPS CONSERVATORY, SCHENLEY PARK, PITTSBURG.—The *Home Messenger*, an American publication, in its number for May gives an account, accompanied by illustrations, of what are stated to be "The most elegant, spacious and substantial systems of pleasure greenhouses in the New

World." They have been presented to the City of Pittsburg by Mr. HENRY PHIPPS, and constitute "the most princely donation of the kind ever made to any city in any country." The illustrations suffice to show that the houses are well filled with plants of many kinds, to all appearance excellently cultivated. These famous conservatories are open to the public without cost throughout the year, and are under the direction of an old acquaintance, Mr. WILLIAM FALCONER, formerly on the staff of the *Garden*.

CRICKET AT CHISWICK.—An interesting cricket match was played on the Front Common, Turnham Green, on Wednesday afternoon last, between gardeners (in high hats!) and the Post Office employees at Chiswick. The gardeners won on the first inning. Messrs. MEARS and GREENHAM played well for the latter, whilst Messrs. E. H. BARRY and BALL did their best for the "men of letters."

PUBLICATIONS RECEIVED.—*Connecticut Agricultural Experiment Station*. A bulky volume, descriptive of work done and successes achieved during 1896.—*The Agricultural Gazette of New South Wales*, January to November, 1896; contents and index.—*Agricultural Journal, Cape of Good Hope*. The issue for June 10 is devoted, as usual, to appropriate matter concerning cattle and crops.—*Monsonia*. A pamphlet reprinted from a May number of the previously-named journal, and describing the nature and history of *Monsonia ovata* (Geraniaceae), and its uses and value as a remedy for dysentery.—*Proceedings of the American Academy of Arts and Sciences*, June, 1897. This pamphlet, devoted to contributions from the Gray Herbarium of Harvard University, deals with—I. Revision of Mexican and Central American species of *Houstonia*; II. Key to Mexican species of *Liatrum*; and III. Descriptions of new or little-known plants from Mexico.—*Botanical Magazine (Tokyo)* for May 20 includes, Note on the Cocoon Fungus, List of Japanese Hepaticae determined by Mr. F. STEPHANI, of Leipzig, and various articles in Japanese.—*Annales Agronomiques*, June 25.—*Journal of the Board of Agriculture* (Vol. iv., No. 1), containing articles on Green Manuring, the Lapwing, Imports of Dairy Produce, Ensilage of Potatoes, Injurious Insects and Fungi, and various notes and reports.—*Select Catalogue of Horticultural Books* (Delamare Printing and Publishing Co., New York). A very useful list of books and magazines of general and special horticultural interest, published in America or England, and obtainable through the above-mentioned firm.—*New York Experiment Station*. We have received a series of Bulletins from this Institution, and note that most of them can be had either in a complete, or in an abridged or "popular" form. The following subjects are treated of:—No. 119, Downy Mildew of the Cucumber and its treatment; No. 120, Spray-pumps and Spraying; No. 122, A Peculiar Insect-enemy of the Apple; No. 123, Spraying Potatoes in Long Island in 1896; No. 124, Anthracnose of the Black-Raspberry.—*Meehans' Monthly*, July.—*Prunes in Oregon*, Bulletin No. 45, for June from the Oregon Agricultural Experiment Station.—*Orchidacearum genera et species*, exposuit FRITZ KRAENZLIN, vol. i., Fasc. i. Berlin.—*The Orchid Hybrids* (2nd supplement) Berkeley, Cal. By GEO. HANSEN.—From the Journal of the Royal Meteorological Society: *Shade Temperature and Report on the Phenological Observations for 1896*, both by EDWARD MAWLEY, F.R.H.S. President.—*Notes from the Botanical School of Trinity College, Dublin*, May, 1897. This includes: The Role of Osmosis in Transpiration, Osmotic Pressure in the cells of leaves, Physics of the Transpiration Current, and Herbarium Notes.—*Journal de la Société Nationale d'Horticulture de France*, June, 1897.

NOTES FROM DOVER HOUSE GARDENS.

THE recent exhibits of plants of Malmesbury Carnations shown at Richmond, and at the Drill Hall, from these gardens (see fig. 21, p. 71), evidenced that Mr.

McLeod can grow them as well as anyone else, if not a little better. Seldom before have I seen such fine plants so rudely robust, and carrying so many fine flowers. The plants shown seem to have been but one-third of the number grown, all of which are very fine. The best of the group are but twenty-two months from the potting of the layers, which took place in October, 1895. They are now in 9-inch pots, and in these will remain to bloom next year, getting in the meantime a top-dressing, and when the flower-buds appear, a little feeding. The nature of the compost seems to be of primary importance, for this consists of two parts loam of the best quality, and one of fibrous peat, very little manure being used; but some woodashes and screened lime rubbish is well mixed in. A very important feature consists in the winter treatment, when the roots and plants are kept rather dry—indeed, every effort is made to prevent moisture from coming into contact with the foliage. It has been well said that Malmesbury Carnations, owing to the soft sappy nature of the wood and leafage, need during the resting period something of Cactus treatment. In any case a dry cool atmosphere, with plenty of air in fine weather, has proved to be the best management at Dover House. Very many of these fine plants having carried from thirty to forty blooms this season will produce fifty next year, growths having been thinned down to that number. Both the flesh-tinted and the pink varieties are grown, the latter in much the greater degree, as it is most in favour.

It was Mr. McLeod's fortune, because of the great pressure arising from the Jubilee celebrations, to be compelled to leave behind the usual plants for making his customary mixed group at Richmond, and in place thereof to take about thirty of his Carnations. Not anticipating so high an honour, he was much gratified to find that the splendid special Silver-gilt Jubilee Medal was awarded to his Carnations for superior excellence and high culture. That medal came in during my recent visit to the gardens, and I can but affirm that it is the finest medal I have ever seen given as a horticultural award.

Border Carnations are grown in abundance outdoors, in special beds and in borders generally. They may be counted by thousands, and are first-rate plants. As especially good I noted The Countess, a very fine pure white, and Pride of the Garden, light rose; Duchess of York, soft flesh; Miss Audrey Campbell, lemon-yellow; Brigadier, scarlet; William of Wykeham, rich rose; Walter Ware, fine purple; Ruby Castle, pink; and the old true crimson Clove. These are but a few of many, and all of good stiff and erect flowering habit. The season seems so far to have suited Carnations, as besides great bloom-promises, there is ample material for layering also.

Violas and Pansies.—So far, although *Violas* are commonly used for bedding purposes, I have nowhere else seen them used to form bedding effects alone. But it is the rule at Dover House to fill a large area of ground in the gardens with these pretty plants, and many are the varieties planted. This season a very long border, fronting the glass-houses and about 7 feet wide, is planted with *Violas* absolutely. At the back is a broad margin of the rich blue, and probably the most popular of its colour, Archie Grant, and a similar margin of the strain Yellow Greive runs in front. Then the intervening space, 5 feet wide, is planted in triangles, the larger and alternate ones having their bases to the front, the reverse ones being smaller. Beginning at one end, the colours run somewhat thus:—The Mearns, Ballion, yellow; Max Kolb, blue; Champion, white; Mrs. H. Bellamy, plum, blotched white; Blue Cloud, here so far almost pure white; Mahogany, reddish striped; Sissy Mellow, of the Countess of Kintore style, but a far better variety; Wemyss, yellow, a capital one, and rich in colour; True Blue, Laverock, white; Acme, plum; Quaker Maid, Duchess of Fife, W. Neil, &c. It need hardly be added, that growth being good, and bloom abundant, this constitutes a very charming *Viola* border. Fancy Pansies, chiefly named varieties, are also largely grown, and very fine and beautiful they

are; still, they lack that pleasing effect which the *Violas* create. One variety—*Tamworth*, yellow—having a massive blotch, seems to be an exceptionally fine bloomer and grower. Just by these latter there is growing a patch of about a dozen plants of the small-flowered double scarlet *Begonia Count Zeppin*. This is planted thinly, on a carpet of silver variegated *Sedum* pegged down, and is but one of a beautiful bedding class of doubles too seldom seen in gardens, yet far more pleasing than is the large-flowered section. Here this double scarlet is brilliantly effective. Another interesting section of summer bedding-plants is seen in the *Celosias* which are growing here. More beautiful colours and better habits could hardly be found anywhere. Amidst large beds of *Asters*, *Stocks*, *Verbenas*, *Snappedragons*, &c., are some *Pentstemons* that are exceedingly fine in quality. These comprise some

ground, a grand crop; Peas, in spite of the heat, luxuriantly healthy, and blooming or podding profusely. All this is the product of high culture and constant supervision. *A. D.*

COLONIAL NOTES.

GRENADA.

Hippeastrum (Amaryllis) equestre, Herb. — For several weeks past (May), this good old garden favourite has been brightening up spots in the Botanic Garden, Grenada, and in the grounds of Government-house, half a mile distant from the first-named place. It grows wild in some parts of Grenada.

themselves beforehand with a pennyworth of Guinea-pepper, bought at a druggist's, and surreptitiously sprinkle the floor with it whilst dancing is in progress, the result being rows and fights shortly afterwards. *W. E. Broadway, Grenada.*

PRUNING PEARS.

THE objects of pruning a Pear-tree are to give it a required form, and to regulate its fructification. Without pruning, the branches grow irregularly, and often bear but once in two years. Our remarks apply here principally to dwarf Pears, and to those trained as pyramids, spindles, palmettes, candelabra, vases, or cordons, and for these we may lay down certain general principles.

Winter-pruning is begun as soon as the leaves fall

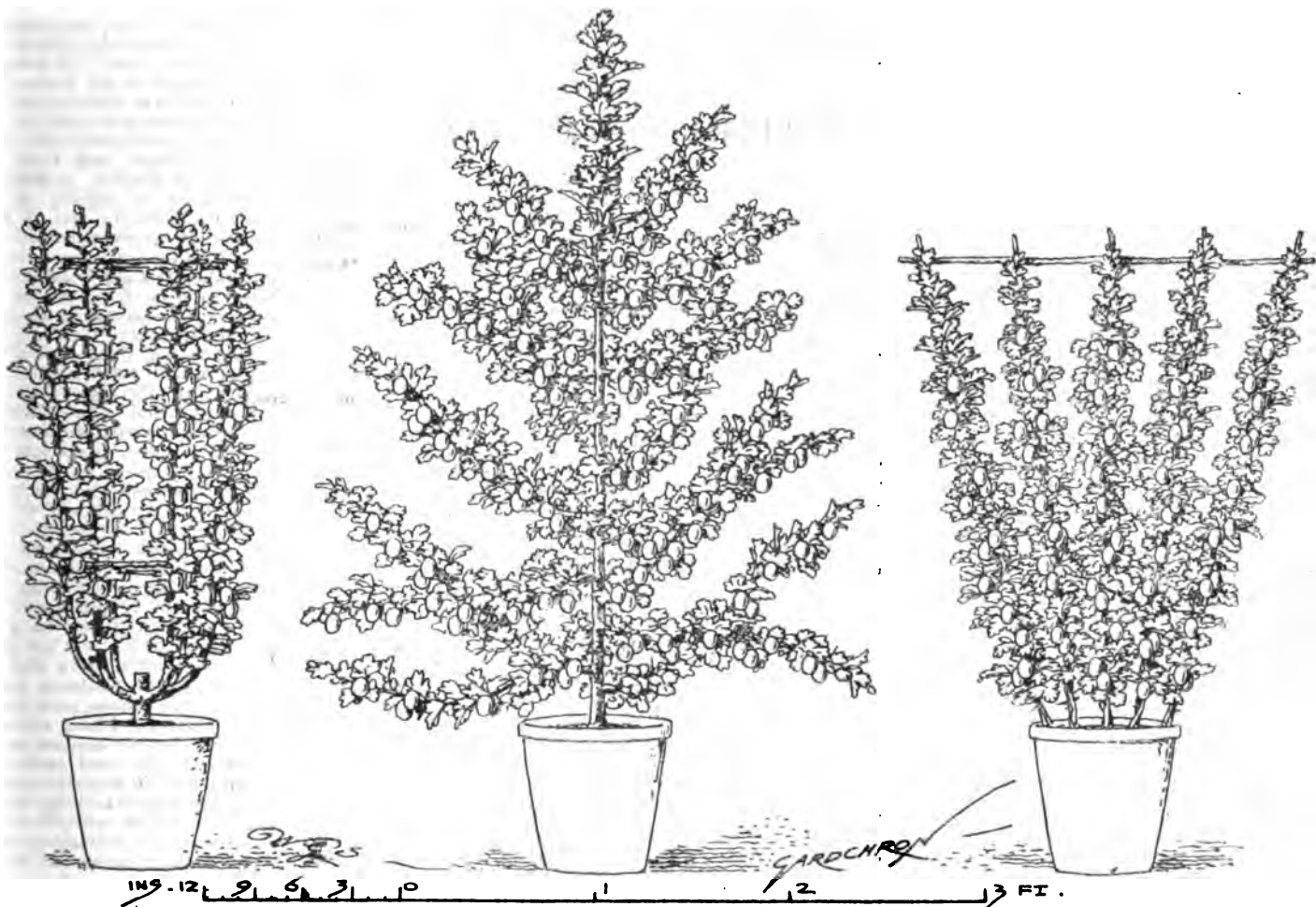


FIG. 23.—TRAINED GOOSEBERRY BUSHES. SHOWN BY MESSRS. JAMES VEITCH AND SONS.

(See our Report of the Royal Horticultural Society's Meeting of July 13, in our issue for July 17, p. 42.)

of the best northern named varieties, and they show what remarkable excellence these good biennials now display. Grapes are abundant and good, and Peaches and Nectarines in remarkable profusion. One range gives Dymond, Bellegarde, Condor, Grosse Mignonne, Early York, Princess of Wales, Prince of Wales, Marquis of Downshire, and Buckingham Mignonne Peaches, all fruiting finely; and Lord Napier Pine-apple, and other Nectarines. The Buckingham Mignonne Peach, it is said, was put into commerce so long since as 1817. Outdoors there were big breadths of Strawberries carrying great crops, and the plants in splendid condition. Superlative Raspberry is here wonderfully fine and early. Apples and Pears, on young and old trees alike, oddly enough carry capital crops, far better than most gardens show. Vegetables are first rate. Such breadths of spring-sown Onions cannot be excelled. Beets are already strong; Carrots, for the sixth year on the same prepared

Vanda teres, Lindl. — Annually at Government-house, Grenada, *Vanda teres* may be seen in flower. During the present month (May) an old dead tree-stump is there shielded and transformed into a beautiful object through this Orchid flowering upon it. It is wonderful the way in which, upon living trees especially, it throws out its long, winding, and branching roots.

Guinea-pepper [*Capsicum*?] is put to a curious use by some of our peasantry here, if the assertion of the fact by several of them is really correct. The peasantry are fond of dancing, and around the Botanic Garden dances are frequent, and carried on with great zest and vigour. It is a kind of subscription affair, each person paying so much per head for the privilege of the evening. Now, when among the members present there are those who wish to create hostilities, and end the evening perhaps in a fight, these members provide

in autumn, and ceases when vegetation recommences in spring. Pruning should be effected during the dormant period [when the sap is down, as the gardeners say], but not when there is rime or frost.

Prune in spring, when the sap is ascending those trees and branches the growth of which it is desired to check.

Prune in autumn those trees or branches which it is desired to develop and strengthen. Pruning can thus be carried on twice in the same year, by the removal in autumn of the woody branches; in spring, by the pruning of the fruit-bearing branches.

The branch should be cut at a point immediately opposite the bud which is to form the extension shoot. This bud is chosen: (1) on the upper side for a branch which is weak or inclined to grow erect; (2) on the lower side for a sloping, or one that is too vigorous; and (3) at the side for a branch which is directed obliquely.

If the shoot is spurred, the spur is cut away; an adventitious bud will replace it. For the branches of espaliers it is best to cut away the fore-right shoots.

The pruning back to an eye should be so done that when this develops it will remedy the deviation caused by the pruning of the previous year; if necessary a little stick may be tied on with two bands to support and train the extension shoot. Long pruning is that which leaves most wood on the branch, short pruning is that which removes most; the two operations may be performed alternately on the same tree in successive years. Long pruning favours fruit-bearing without encouraging the growth of useless unnecessary shoots; it is applied to weak or inclined branches or to those placed at the base of the stock. Long pruning is practised in the case of Pears grafted on the Pear stock or for those desired to form a large tree.

Short pruning is made use of for plants grafted on the Quince, or intended to be kept dwarf. Long pruning is best for trees in a cold situation, short pruning is more suitable for trees in a warm aspect. Long pruning is adapted for a sterile branch, short for one that is too fertile. Long pruning is desirable for plants which branch freely, short pruning for those which branch less freely. In long pruning, a branch which has become bare at the base, it is necessary to suppress the buds near the terminal bud, and to make a small notch above the eyes at the base.

A stunted branch or a tree regularly formed, may remain unpruned so as to strengthen it and promote its fructification. It may be pruned biennially so as to maintain the shape or branching of the tree.

When the eyes seem indisposed to open freely, they can be made to do so by making a notch with the pruning-knife above the eye; this incision, which should not exceed one millimètre in width, induces the inert eye to sprout. It must be understood that the little cut only penetrates the bark, which is raised on each side. This notch, employed in the case of robust trees, will not be without value in the case of *Beurré Giffard*, *Clapp's Favorite*, *Fondante des Bois*, *Louise Bonne d'Avranches*, or *Directeur Hardy*, trees which grow freely, and in which the buds at the base remain undeveloped, the upper buds thus profiting at the expense of the lower ones, so that it is well to pinch off the prominent and spurred-buds near the eye destined to form the growing shoot, to prolong the framework of the tree.

Now, if short-pruning be employed in the case of these varieties, to encourage the development of latent or inert buds, there is the risk of retarding fructification, which must be taken into consideration.

It will not be so with varieties more fertile than vigorous, such as *Dr. Jules Guyot*, *Madame Treyve*, *Colmar d'Arenberg*, *Marguerite-Marillat*, or *Beurré Clairgeau*, for which short-pruning is needful, although a few fine strong shoots should be left to lengthen.

Long-pruning has no drawbacks in the case of varieties which branch freely, for *Comte de Lambertye*, *Nouveau Poiteau*, *Alexandrine Douillard*, *Président Mas*, *Eva Baltet*, *Beurré Capiaumont*, *Beurré Bachelier*, *Charles Ernest*, *Le Lectier*, *Beurré d'Hardenpont*, *Passe Crassane*, *Olivier de Serres*, or *Bergamotte Sannier*. Nevertheless, short-pruning will be resumed when the tree is weakened by its fructification. We appreciate the superior flavour of *Beurré Superfin* and *Doyenné du Comice* when grafted on the Quince and long-pruned. The knives should be moderately used in the case of *Van Mons*, *Madame Lyé Baltet*, *Royale Vendée* and *Doyenné de Mont-jean*, which do not produce wood freely, but are perfect as to fruit. In the case of those types which usually branch regularly, and do not, as a rule, fruit excessively, such as *Précoce de Trévoux*, *Williams'*, *Triomphe de Vienne*, *Beurré Lebrun*, *Duchesse d'Angoulême*, *Beurré Hardy*, *Beurré Dumont*, *Baltet père*, *Doyenné d'Alençon*, pruning should be adapted to the strength and fertility of the tree.

In those trees where the fruit-buds are placed at the end of the twigs, such as *Doyenné de Juillet*, *Marie*

Louise, *Urbaniste*, *Bergamotte Esperen*, *Passe Colmar*, *Josephine de Malines*, these little fruitful branches are of course untouched, but when once the fruit is over the ordinary course is followed.

For fancy training with branches bent in various directions, training-sticks are indispensable, as well as pruning down to a bud which will take the desired direction. It is as well also to leave a short stump to which the young shoot can be tied. *Epargne*, *Beurré d'Amanlis*, *Beurré Diel*, *Triomphe de Jodoigne*, *Beurré de Rance*, *Figue d'Alençon*, and *Chamontel*, may be mentioned as instances. We must not forget to add that summer pruning is undertaken every year to complete or rectify the results of winter, autumn, or spring pruning.

It will be seen that each Peartree has its own special characteristics. We cannot too strongly advise fruit-lovers to study their orchards, to read good books, attend courses of arboricultural lectures, and especially to take the pruning-knife in hand with caution, but without undue fear of wounding their own fingers! *Charles Baltet, Troyes.*

CULTURAL MEMORANDA.

CAMELLIAS.

Those who, owing to excess of work, could not report their plants as soon as the flush of blooming had passed, may do so at this date. The bloom buds are now formed even on the latest plants, and if the plants are not afforded more water than will keep the soil moderately moist, no new top-growth will be made, neither will the buds fall off.

The repotted plants, if standing out-of-doors in half-shady spots, may remain there after being repotted, and if very heavy rains fall, and the heads are not dense enough to ward off a large proportion of the rainfall, two roofing tiles or slates may be placed over each pot. It is soon done, and prevents the soddening of the soil that would otherwise occur. Small plants may be plunged in coal-ash beds, and large ones in tubs stood on the surface on a brick at each of the four corners, shading the outside row of above-ground plants with slabs of cork, outside slabs of trees with the bark left on, or some similar contrivances. Do not afford manure water after this date, nor let moss grow on the outsides of the pots or on the soil. A syringing once a day in hot weather is very beneficial to Camellias either indoors or out.

Grafting may be done in close handlights placed within deep cold pits at this season, employing any kind of grafting for the purpose; and covering the point of union with clay or grafting-wax. Whip or side grafting with a leaf or two of the stock retained above the graft, answers capitally, as does cleft grafting, with a growing bud left at the top till the union takes place. Gardeners should not be running to the nursery for young plants they can easily raise at home, any more than they should buy their Cabbage or Celery plants from the same source which few indeed do.

HOME CORRESPONDENCE.

LISIANTHUS RUSSELLIANUS.—This is a plant in which I have long had a great interest, and which I am never without; seeds are nearly always obtainable, and "R. D." in the issue for July 17, p. 40, need have no fear of its being lost—for the present at any rate. If there were time always to attend to it at the right moment, its culture would not be attended with much difficulty. When sown too early in autumn, the plants attempt to flower, and are then absolutely spoilt; while if sown too late the plants do not make good crowns, and cannot in consequence send up strong stems the following year. A nice adjustment of the time of sowing, temperature, and position, is absolutely necessary to obtain a good result. Spring sowing may be successful, but the safest plan, no doubt, would be to make several sowings. I have had very good success by growing the young plants on for flowering in a hot-bed in spring, the rosette stage having been reached

the preceding autumn. The plant is properly a biennial. *R. J. Lynch.*

SPOT IN DENDROBES.—This is an affection which the most experienced and the most observant persons among us cannot get to the bottom of. We battled with it in the Rev. M. J. Berkeley's days, he from his scientific dealing with it, we as practical men face to face with it in our Orchid-houses. Young men in the exuberance of youth and partial success in cultivation pooh-poohed it, and lectured very knowingly in their own houses how it could be mastered; but as age and experience crept on them, their assertions became less wild, and they had to "eat the Lark." I assert, without fear of contradiction, that there is no collection of Dendrobies in this or any other country completely free from "spot" in the young growths of Dendrobies. There is no doubt that this in-and-in breeding aggravates its production. Take one of the earlier of crosses, *Dendrobium Ainsworthii* roseum, and you will find some difficulty in getting a spotless-leaved plant of it. The fact is, since Mitchell showed the plant of it in Manchester some twenty-six years ago, there never has been a spotless plant of it. Moreover, this "spot" in some things does not confine its ravages to the leaves; it gets over the bulbs in the course of ripening, and all the various kinds of treatment adopted will not induce such health as to make the plant marketable. Coming down to more recent times, and taking *Dendrobium splendidissimum* illustre, a similar disposition to the affection or disease, or whatever you may call it, is found; and up to the present time we have no specific either cultural or anything else that will rid the *Dendrobium* altogether of the pest. We all know that *Dendrobium nobile* is the champion parent of some of our choicest gains, and that is a species less liable to the incursion of spot or troubles than any other of the family. And yet we are not without our troubles here. Take the white ones, which are natural hybrids, and we find that they are disposed to this form of gangrene, affecting floral reproduction. *D. Amesiae* and other albinos bearing different names, but only infinitesimally varied, grows into shoots that bear in time spotted leaves, as do even the selected forms which have risen so much in value. Even the giant and the most valuable of the noble family, *D. nobile nobilissimum*, is badly spotted in many collections, and so are noble *Sanderianum*, noble *Statterianum*, and that little perfectly-formed gem, noble *Hardyanum*. So that cross-breeding is not the sole cause of inherent or predisposed weakness. The very commonest forms taken from various localities—high altitudes and low grounds—fall a prey to the spot trouble. Now what is the remedy? Is there any specific treatment that will tire out the enemy in the various glass chambers distributed over the country? I have noticed over a series of years some collections comparatively free of this, but none absolutely free, and gardeners are at their wits' end in trying to improve upon these varying conditions. We may be told that the atmosphere is too dry, or too wet, or too confined from a ventilation point of view, is too draughty—indeed, we can conjure up dozens of causes, but true, the palpable fact remains that one portion of a plant is without flaw, while another portion is more or less affected. Some aver that they do not attach any importance to spotting in a strong plant, and after a time they cut off the leaves, hoping that next year's crop will come sound. But does it? And then any first-rate culturist will bar spot as a thing detested and detestable; and so do I. But where is the sovereign remedy? This is a matter suitable for threshing out by our numerous practical men. The field is now a wide one, tens of thousands being imported every year. Moreover, the love for Dendrobies is increasing vastly, and plastic as this division of them is in our hands, we are not a bit advanced, from a cultural point of view, since the beginning of the Victorian Era. A little healthy debate in your columns would undoubtedly stimulate investigation and bear fruit. *James Anderson, Manchester.*

FROST IN JULY.—No wonder Mr. Kitley, when writing from Warwick last week, expressed astonishment at the low readings recently indicated by his grass minimum thermometer. Judging from the temperatures he has given (p. 56), I venture to assure him that it is very unlikely there could have been a frost on any of those ten nights, although the indications of that thermometer have no doubt been correctly recorded. A few facts will indicate my reasons for coming to this conclusion. According to Mr. Kitley's table, the average difference for the ten

nights between the temperatures registered in the Stevenson screen and those on the grass exceeded 18°, while the greatest difference on any one night was 21°. Here, at Berkhamsted, taking all the nights of the last twelve July, the mean difference between the indications of the grass thermometer and that in a Stevenson screen is found to be less than 5°, and the greatest difference on any night during that period 9°. Then, again, if we confine the comparisons between the two places to the coldest night of the present month, the lowest reading in the screen was 2° colder at Berkhamsted than at Warwick, and yet the exposed thermometer never fell lower than 33°, whereas at Warwick on the same night a similar thermometer showed 9° of frost. I should say there must be something like 10° of spirit lodged in the upper part of Mr. Kitley's exposed thermometer, and until this instrument is set right, its readings must always be to that extent too low. When will gardeners and others using minimum thermometers learn that no instruments more readily get out of order, particularly if exposed at any part of the day to the sun? In fact, scarcely a month passes that my own grass minimum thermometer does not require setting right. The tube above the spirit, especially the upper part of it, should be frequently examined, and if any spirit be found to have evaporated and become condensed there, it should be shaken down by holding that part of the thermometer furthest from the bulb securely in the hand, and swinging it sharply downwards at arm's length until the truant spirit has been made to rejoin the main thread. Our British climate is already too cold for the well-being of many of our garden favourites, without the repeated attempts of garden minimum thermometers to make it out even worse than it really is. *E. M., Berkhamsted.*

RASPBERRY GUINEA.—The raiser of that splendid red Raspberry, Superlative, has also obtained as a seed-sport from that variety a white one, that seems to be an exact reproduction in growth, leafage, size, and quality of fruit of its well-known parent. The stock is now in the hands of Messrs. G. Bunyard & Sons, Maidstone, in whose nursery I recently saw it growing. Practically, it is a white Superlative, and the size of the fruits will make it a valuable addition to our dessert Raspberries. Messrs. Bunyard have also a wonderful stock of Superlative growing on their seed-farm; the growth is very stout, sturdy, and from 3 to 4 feet in height. The suckers on this limestone formation produce roots abundantly, and there must be on the breadth 100,000 at least, so extensive is the breadth. The variety has in growth and leafage very marked character, which the new white exactly reproduces. *A. D.*

VINES AND THE XL ALL VAPOUR.—I have vaporised Vines here when the fruit has been hanging with XL All, and found no evil effects. It has generally been done when the Grapes were starting to colour. I have found it kill some of the spider, apparently the older ones, as what appeared very young were still very active; but I have found it necessary to take out of the house all *Adiantums*, especially *Farleyense*. I think with a free and judicious use of XL All, no gardener need be troubled with many insects—the Tomato-fly does not appear to like it. *J. Barnard, Mostyn Hall Gardens, Flintshire.*

THE EXCLUSION OF FOG FROM PLANT-HOUSES.—With reference to the exclusion of fog from plant-houses (see remarks in last issue, p. 47), I venture to suggest the use of pounded gas-coke as a probably efficient filtering material. I do so on account of the success I have had in cleansing the exhaust from a gas-engine. The products of combustion from the explosion chamber were formerly offensive, and particularly inconvenient, by depositing oily matter, which was very difficult to remove, on the roofs of the plant-houses. Now, however, by leading the exhaust through a brick chamber in the ground, filled with about a sack and a half of coke, I find that nothing more than light whiffs of pale smoke come through, which are quite unobservable in certain states of the weather, and sometimes cannot even be detected. The coke remains efficient for at least an approach to a couple of years, and for straining out fog would probably last an almost indefinite time. An enormous quantity of matter is removed from the exhaust of the gas-engine, even to the extent of having to pump liquor out of the chamber once a month, and it appears to me only a question of method to secure an equally good result in the case of fog. Our fogs are fairly pure and uncontaminated, so that no experiments of the kind are required here. *R. Irwin Lynch, Botanic Garden, Cambridge.*

VEGETABLES.

FRENCH BEAN, SUPERB EARLY FORCING.

THIS variety of Kidney Bean sent out a year or two ago by Messrs. J. Veitch & Sons, being an early cropper out of doors, is a useful acquisition to our list of Beans. Sown this year at Dropmore in the open garden, alongside of and at the same time as *Ne plus Ultra*, it furnished usable pods about ten days earlier than the latter. The sowing was made on April 23, and we gathered pods of Superb Early on July 7, and more than a week will elapse before pods of *Ne plus Ultra* can be gathered. The new variety is of rather stronger growth than the latter, has dark green foliage and pods, the latter being produced in abundance. There may be others of equal earliness, but this is the earliest I have yet grown. *C. H., July 10.*

BURFORD, DORKING.

THE beautiful gardens of Sir Trevor Lawrence, Bart., famed above all for its marvellous collection of Orchids, also afford a home for all the newest and best plants for flowering in the open garden, and in which, whatever good qualities they may possess, are shown at their best. Thus, from early spring to late in the winter, in the pretty garden nestling at the foot of Box Hill, the rare, as well as the showy flowers of each season, are to be seen in perfection. At the present time, the showiest and most profusely flowered are the beds of the newer kinds of *Pentstemons*, with tall spikes of richly-tinted flowers; a fine bed of the graceful carmine-scarlet *Pentstemon barbatus Torreyi*; and a few other species of *Pentstemon*, of which the blue *P. heterophylla* is very distinct and of a charming tint. On one side is a long bed of mixed white and pink *Malva grandiflora*. One bed is filled with *Platycodon grandiflorum* var. *Mariesii*, covered with rich dark blue salver-shaped flowers; another with *Lobelia cardinalis* varieties; one of the showiest is made of mixed colours of the new varieties of *Salpiglossis*; and in several places a great show is made by *Glaadiolus Lemoinei* and other hybrids. One bed of Lemoine's new *Phloxes* contains a large proportion of sterling novelties, both as to size and colour of the flower, a fine large pure white, and a very beautiful new carmine-coloured variety being specially noteworthy. In the portion set apart for the Roses, there is still a good show, the arches being covered by *Crimson Rambler*, which still retains its profusion of brightly-coloured flowers, although earlier in the season they were still more beautiful.

One nook in the garden enclosed by the Orchid-houses, is especially showy and interesting. The brickwork of the houses is hidden by the rich growth of rows of *Crinum Powellii* and *C. Mooreanum*, which here stand out all the winter, and are now plentifully furnished with their stately bluish-white flowers. At one end are a number of the pure white *Crinum Powellii album*; and in the centre are several pyramidal plants of *Streptosolen Jamesoni* covered with its brilliant orange-red flowers. On one side the varieties of *Nymphaea Laydekeri*, *N. Robinsoniana*, and others of that class are very successfully cultivated in tubs of water sunk in the ground, and are now bearing a good show of flowers varying from light yellow to pink and crimson, behind them being tall, trained plants of *Mina lobata*, *M. sanguinea*, and *Rhodochiton volubile*, the last named a fine old climber with dark purple flowers, which might be more commonly grown in gardens with advantage. The beds filling the central space of the pretty enclosed garden have a fine selection of scarlet, crimson, yellow, and spotted *Cannas*, which are here grown to perfection both in the open garden and in the greenhouse, where their ornamental foliage and richly-tinted flowers arrange well with the tuberous *Begonias*, which give the greatest show of colour at this season. At the end of the greenhouses is a fine batch of hybrid *Streptocarpus*, and suspended overhead plants of the graceful *Lotus peliorhynchus*, which, as grown at Burford, is one of the most elegant of hanging plants.

The Orchids at Burford furnish more novelties and more surprises than any other collection has ever done. If a plant is long talked of as being unmanageable or impossible to flower, in time it turns up in perfection in Sir Trevor Lawrence's collection. The latest instance of this is the fine *Vanda* × *Miss Joaquim*, illustrated from the Burford collection in the *Gardeners' Chronicle*, June 26, this year, and which, after being divided into two, seems now about to flower again. But even a more remarkable instance is the flowering of the gigantic *Grammatophyllum speciosum*, which has only flowered on three or four occasions in Europe. The large specimen at Burford has a very stout inflorescence, with distant buds on the basal portion, and a number more closely arranged on the upper part. Its wonderful and showy flowers will soon be expanded, and will possibly be seen at the next meeting of the Orchid Committee of the Royal Horticultural Society. The grand collection of Orchids still retain their usual vigour throughout, and the many rare and singular-looking botanical species, which always give such interest to a visit to Burford, furnish a number of pretty subjects in bloom, although the showy kinds such as *Cattleyas* and *Lælias*, are now for the present over. In one house the centre table was occupied by a very fine collection of large specimens of all the species of *Sobralias* worthy of cultivation, and already *Sobralia macrantha*, *S. xantholeuca*, the pretty lilac-coloured *S. Lucasiana*, *S. x Veitchii*, and others, are in bloom, and many more in bud. In the same and adjoining house the tall-growing *Epidendrums* are very showy, among them being *E. radicans*, still the richest and best in colour; the bright red and yellow *E. Moensii*, and *E. Schomburgkii*; the rose-coloured *E. Ellisii*, and the dark-red *E. O'Brienianum*, *E. Wallisii*, *E. nemorale*; also a pretty orange-scarlet coloured hybrid raised at Burford; and of botanical species, *E. amplexicaule*, with purplish leaves and whitish flowers; *E. volutum*, and others of that class.

In the cool-house, where the fine collection of *Masdevallias* always present such a good appearance either in or out of flower, are a number of interesting things in bloom, such as *Masdevallia trichete*, *M. tridactylites*, *M. platyglossa*, *M. sororula*, *M. Reichenbachii*, *M. Stella*, *M. infracta*, and others of the lesser *Masdevallias*; also among the *Pleurothallis*, *P. macrolepharis*, with its gnat-like flowers on almost imperceptible stalks; *P. rhombipetalum*, &c. Here, too, are some pretty plants of *Odontoglossum aspidorhinum*, *Lehmanni*, profusely flowered; well-bloomed *Stenoglottis longifolia*, some of the smaller *Zygopetalums* of the *Promenaea* section; and the plants of *Colax jugosus*, which thrive better in the cool-house than in the warmer ones where it generally grows.

In one lean-to house of a cool temperature in flower were *Odontoglossum Uro-Skinnersi*, *O. Schleiperianum*, and a few other *Odontoglossums*; *Oncidium spillopterum*, *Maxillaria Hübschi*, *M. venusta*, *M. fucata*, and other *Maxillarias*; in a warm house in flower were a number of *Cattleya Eldorado*, and its white variety, all very beautiful, and delightfully fragrant; the yellow-spotted *Oncidium guttatum*, the scarlet *Habenaria rhodocheila*, *Cypripedium* × *Laurel*, the singular *Luisia volucris*, and *L. cantharides*, both with insect-like blooms; and various *Cypripediums* of the *Selenipedium* section.

Among the more noteworthy of the other plants in bloom were a fine specimen of the rare *Catasetum Russelianum*, *C. Oerstedii*, with a very strong spike of unusually showy flowers; the charming *Dendrobium* × *micans*, still one of the most beautiful of hybrid *Dendrobiums*; the rich scarlet *Epiphronitis Veitchii*, *Aganisia ionoptera*, the elegant *Platylinis filiformis*, with nearly one hundred spikes of flowers; the rare and beautiful *Polycycnis Lehmanni*, *Cypripedium caudatum* *Wallisii*, *Vanda Hookeriana*, *Brassia brachiata*, *Lælia monophylla*, *Dica* × *Kewensis*, the handsome *Eulophia guineensis*, the singular little *Phalænopsis Listeri*, *Angræcum Scottianum*, *Renanthera matutina*, *Dendrobium Dearei*, and a number of other *Dendrobes*, some of which, from New Guinea, supposed to be new, are about to flower.

THE HERBACEOUS BORDER.

TRILLIUM GRANDIFLORUM.

MANY people complain of their want of success with this pretty North American plant, and it is by no means one of the easiest of subjects to deal with. A few days ago I met with the finest plant of it that I have ever seen, growing in the garden of Ketton Cottage, where Mr. Burroughes possesses a fine collection of hardy plants. The plant was shaded from direct sunshine by the overhanging branches of some Rhododendrons, and I was informed that it had been planted there quite ten years ago, in a mixture of peat and Nottingham peat-moss manure—the same soil, in fact, as the Rhododendrons were growing in. The situation is low, being by the side of a brook which frequently overflows its banks in the winter and spring. It was exposed to the north and east, but the force of cutting winds is broken by friendly screens of shrubs at no great distance away. This plant had fourteen flowers, more or less expanded, the largest of which measured over 5 inches in its greatest diameter. *W. H. Divers, Belvoir Castle Gardens.*

NURSERY NOTES.

WALTHAM CROSS ROSES.

FOR better or worse, according to circumstance, thunderstorms are frequently of a very local character. It was due to an unusually remarkable example of this phenomenon that we were able to see the Roses of Messrs. W. Paul & Son, on the 20th inst., under favourable conditions. A courteous invitation to pay what proved to be a very interesting ramble was accompanied by a hint that a storm might at any time ruin the effect the profusion of blooms created. The train had hardly left Liverpool Street Station, before it appeared that we should be too late, though not an hour had been allowed to escape before accepting the invitation. London was dry, and the grey, dusty streets to the east of the city were just as suggestive of drought as they had been previously, but the train had no sooner conveyed us into the suburbs than it became evident that an extraordinary storm of rain had fallen over Stratford, Clapton, and the immediate districts. Some fields along the route were flooded, and there had been a deluge. What would the Rose Nursery be like? We thought of former visits to similar places, and remembered what an amount of water each bunch was capable of holding for a time, and how cheerfully it shed every drop upon the person unfortunate enough to brush past and touch it. But there were signs that we were leaving the fury of the storm, and in a few minutes we alighted at Waltham Cross to find that not a drop of wet had fallen there. We must dismiss this circumstance of our visit, however, though some who have lived in the district for upwards of sixty years declare that they have not previously witnessed a severe storm so localised.

A visitor to these nurseries for the first time would probably be struck by one or two features of their situation. On one side the ground is bounded by the high road from London to Cambridge, on the opposite by the Great Eastern Railway line also to Cambridge, and from Waltham Cross Station the nursery is entered from a third side. Now the offices are upon the high road, and from these to the railway line there is a broad green walk flanked on either side by coniferous and other trees of an ornamental character. This distance is about 600 yards, and the walk being moderately high a very good general view of the nursery, and an idea of the stock it possesses can be obtained. Moreover, it is a very pleasant vista, and it gives a characteristic to the establishment of a kind that many such places lack. If the visitor happens to be a Rose loving individual, these general features have been noted in less time than it takes to describe them, and he has left the pleasant greensward for the breadths of Roses, here, there, and everywhere. On the one hand is a breadth or plantation of Teas and Noisettes, and of hybrid Teas, Maidens upon the Briar

stock. On closer inspection one notices the free-flowering Clara Watson, a salmon-pink flower, and one raised by Bennett, whose memory English rosarians have cause to cherish. Then there is Souvenir de Madame Sableyrolles, a variety with many shades of colour, and Marie d'Orléans, a good Rose resembling Madame Lambard, but a few shades deeper in colour. It is one of a number that Mr. Paul selected from the Riviera, and might be appreciated by some who at present do not know it. White Lady there was introduced by this firm some half dozen or more years ago, and was recently honoured by an Award of Merit of the Royal Horticultural Society. It has creamy-white flowers, and may be recommended to any gardener who has not made its acquaintance. Madame Hoste is very well known, so is Viscountess Folkestone, a H. T. of Bennett's. How free it is to be sure! Its large flesh-tinted flowers are numerous upon every plant, and its foliage fine and healthy. Grace Darling, another H. T., and Sunset, a pure Tea, are noticed. The latter is very pretty as a freshly-opened bud, but soon loses some of its colour. Lady Mary Fitzwilliam, a H. T. that every exhibitor ought to grow, and Camoens, pure Tea, are dissimilar in character but equally desirable. Camoens makes a good bedder, being very free in its production of rose-coloured flowers, shaded yellow from the centre, and it is comparatively a constant bloomer. Passing Francesca Kruger and the pretty yellow-flowered Etoile de Lyon, we observe a bed of Noisette varieties where W. A. Richardson and the little gems so useful for a variety of purposes might be studied did time permit. Mention must only be made, however, of a creamy-yellow Noisette, described as Madame Bernacchi, apparently free in flowering, possessing good petals and very promising. Turning from the picture the delicately-coloured and prettily-formed Teas create, to the hybrid perpetuals, there is more rich colour, and they are much more showy. Abel Carrière, A. K. Williams, Marie Baumann, and Fisher Holmes are effective anywhere, and being maiden plants, these rather shy-flowering exhibition varieties, even A. K. Williams, were seen in satisfactory condition. But how free is Captain Christy! The half-dozen rows of this variety, in which each plant close habited with a few huge pinky-white blooms clustered together, are very distinct in this respect. Gloire de Lyonnaise and Horace Vernet are well known, but the latter is worth a word of praise even in this hurried criticism—its petals are good and the colour brilliant. Coming again across some hybrid Teas, one notices the variety known as the White La France, viz., Augustine Guinoiseau, which, though not pure white, may be described as such in comparison with the type. It is useful as a bedder because it has the form of La France, but in another shade. La France is close by, but it suffers through being in close proximity to Caroline Testout, a much higher coloured Rose than La France, but of less exquisite form. The hybrid perpetual General Baron Berge, raised by the same French grower as Merveille de Lyon and many others, deserves to be grown more frequently than it is. It is a scarlet-crimson flower with a shade of violet, an excellent bloom even when fully out. Next is Clio (Wm. Paul & Son), a grand H.P. with flesh-coloured flowers, rosy in centre, very large, and produced freely; it is described by Mr. Paul as an excellent pot-Rose in May. We now stay to admire two of Messrs. Dickson's new Roses—Helen Keller and Mrs. W. J. Grant (Belle Siebrecht). They are pretty well known now as being very valuable acquisitions, but the extraordinary vigorous growth and free-flowering habit of Helen Keller was certainly remarkable; like some other good varieties, they are susceptible to mildew. We must hasten to mention a few others of the newer varieties, some of them introductions by the Waltham Cross firm. The first may be Waltham Standard, H.P., likely to make a first-class exhibition Rose, of vigorous habit, flowers much resembling those of A. K. Williams, but distinct in shade of colour. Zephyr (Tea-scented), a capital variety for bedding, of vigorous and free habit, flowers open, yellow, fading to tinted-white. Sylph, a Rose of most pleasing colour, deep salmon flesh in centre,

of good size, and well built. We were fortunate in seeing blooms of this and a few other varieties that had been cut in the morning, and therefore possessed very much more colour than those upon the plants after midday in hot sun. Eucharis, figured in *Gard. Chron.*, Dec. 7, 1895, was well represented; it is a tea-scented Rose for any garden, being vigorous and free, and it is well known to be exceptionally valuable for winter forcing. Mrs. Ada Carmody is a pretty new Tea of pink colour, but the petals on the inner side are curiously tinted with yellow.

One of the very best of the new Teas is Empress Alexandra of Russia; its colour is very difficult of description, but may be said to be deep red, shaded with orange. The red colour is an unusual tint. It is certainly a grand Rose from any standpoint, but more particularly by reason of its pleasing colour.

A new China Rose from the Continent, and named Madame Eugène Resal, is deserving of praise also by reason of its bewitching colour; it is very variable, but in certain stages it cannot but please. Like most of the China Roses, it is very free, and may be used for massing. Grand Duke A. de Luxembourg, H.T., Ella Gordon, H.P., and Duchess of Bedford, H.P., are Roses worthy of note; but we must not linger. Several varieties of Rosa rugosa, and some other garden Roses were admired also. A large breadth of climbing varieties had made very good even growth, but these flower little the first year, though a few blooms appeared upon Waltham Climbers Nos. 1 and 3. The plants of Maréchal Niel were very praiseworthy.

Has the season been propitious to the growth of Roses? At Waltham Cross, Yes. Mr. Paul admits he is well satisfied with the growth they have so far made, and they have bloomed well also. The Rose-bushes here are much the same as one sees them in his own garden. There is an absence of the special high cultivation for exhibition blooms, and possibly this is the better for the plants. The usual stocks are used, but the great majority are upon the Briar. The Manetti is useful for trees that are to be cultivated in pots, and because of its irritability, it is especially desirable for forcing. The process of budding for the present season has been commenced.

STOCK OTHER THAN ROSES.

Our reference to the general nursery stock must be brief, but it should not be assumed that Rose monopolise all of the 40 acres at Waltham Cross, and of the three other nurseries possessed by the firm; trees and shrubs, fruit trees (trained and untrained), pot-Vines, and even Dahlias and a very miscellaneous collection of plants are grown. Besides these, most of our readers are aware that Messrs. Paul keep up a capital collection of Camellias, and one that is quite unequalled in this country. But our short afternoon visit was at an end, the return train to the city had to be caught, and so, with thanks to the veteran rosierist, Mr. Wm. Paul, who, it is pleasing to record, is still in the enjoyment of excellent health, and to his son to whose courtesy we gladly acknowledge our indebtedness, we take our leave.

MESSRS. H. CANNELL & SONS.

At so extensive a nursery as that of Messrs. Cannell & Sons, it is not a light task to pay a visit at any time of the year and to confine one's remarks to one or two subjects only. On the occasion of a recent visit, Carnations formed the object of our quest, and it was a surprise to find a collection of these plants grown in 8-inch pots under glass. The method has its advantages, especially when seed-saving forms one of the objects in view; moreover, a house enables the grower to afford shade readily in hot weather, and to keep the temperature comparatively cool by means of ventilation.

The plants are layered in the pots, the operation being done easily by almost filling up the great amount of space left at the potting above the ball, the plants being stood outside fourteen days after being layered. Nice blooms were remarked of the following:—Mrs. Gooden, a yellow ground with crimson edge; W. Coombe Miller, a seedling raised

on the place, a fancy with crimson markings on salmon-red. Seedlings, indeed, were rather many, but as names were attached in only a few instances, we can only allude to them in general terms. Carnation *Mme. Van Houtte*, a flaked variety, purple on ground of yellow; *Irene*, a crimson bismarck, a good show variety of vigorous habit; *Monarch*, crimson-flaked on yellow ground; *Miss Andrée Campbell* (one of Mr. Martin Smith's raising), a beautiful yellow self—one of the best; *Booklin*, also yellow, with a rich crimson margin, of German origin; *Mrs. Douglas*, a yellow-ground Picotee of great excellence; *Maggie Cocker*, a rose-coloured self; *Daphne*, *Haidée Falbe*, *Besume*, *Montague*, *Lorna Doone*, *Pride of the Garden*, a rosy-pink self, like the foregoing, but a better flower; *Figaro*, *Duchess of Portland* (*Lambe*), *Maggie* (*Cannell*), a deep crimson fancy; and *Mrs. A. Tate*. Owing to growing the plants under glass, they will keep in good condition for a week or two longer.

An account of what we observed in some of the other houses, and in the open ground, will appear in our next issue.

NEW INVENTION.

A CARNATION CLIP, AND A LEAD CLIP FOR FRUIT TREES.

We should not like to assert that this neat little contrivance, the invention of Mr. H. A. Davidson, of Holkham, Norfolk, for supporting the flower-stems of Carnations is absolutely new—indeed, there is little of this kind of thing under the sun that is new. It is however easy of application, very durable, almost invisible, and cheap. It consists of two rings of twisted steel wire separated from each other by a twisted wire strand of about an inch in length, which are slipped over the wooden stick that is to serve as the support to the Carnation-stems, the latter being embraced by two semi-circular ends of the lower ring, which open when slightly squeezed and admit the stems. If the clip be placed between the stem-leaves just above a joint it cannot descend, but will be carried up by the stems as these grow in height. The leaden fasteners of clips, also "something absolutely new," are intended for securing fruit trees, Roses, and climbing plants of all kinds to walls and trellises; and they are made of various sizes and shapes. The form is that of the hanging nursery-label, that is, an oblong, whose length is four to five times its breadth; and from the centre of which, in the case of the larger sizes, a strip of the metal is cut so that the clip has as it were two fingers. At one end the clip has a hole punched out, through which the nail or tie passes that fastens it to the wall or trellis, the fingers or loose ends clipping the branch. It is an application of a flattened form of fastening in lead, for the rounded leaden wire that was much in vogue in gardens for the same purposes a generation or more ago. These fasteners are to be obtained from Dacre House, Arundel Street, London, W.C.

LAW NOTES.

LITIGATION BETWEEN ORCHID GROWERS.

JUDGE PARRY, sitting at the Manchester County Court, July 28, heard the case of *Ashworth v. Wells*. It was an action brought by Mr. Elijah Ashworth, of Harefield Hall, Wilmslow, against Mr. Matthew Wells, of Sale, to recover £50 damages in respect of a breach of a warranty as to the nature of an Orchid. It was purchased by the plaintiff in 1895. The plant figured in the catalogue as "*Cattleya Acklandiae* alba, the only known plant." On behalf of the plaintiff, a number of well known cultivators were called. They included Dr. Hodgkinson, and Mr. G. S. Ball, solicitor. Their evidence was to the effect that if the Orchid had been an alba, perfectly white and well-shaped, it would have been worth from 70 to 150 guineas. It turned out, however, that the plant only produced a coloured flower of no particular value. It was the plaintiff's case that he bought the Orchid to be a genuine alba, and he

thought he had got a bargain when he got it for 20 guineas. Mr. Tweedale, who appeared for the plaintiff, informed the court that the action had been brought as a test case. It was submitted by Mr. Newman, who appeared for the defendant, that there had been no deception. His honour reserved judgment, remarking that as two years had elapsed between the purchase and the parties coming into court, they probably would not object if he took time to consider his decision. He added that the case would give him something to think over during his holidays.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 27.—The meeting held on the last occasion in the Drill Hall was of considerable interest, although, in point of numbers, the exhibits were fewer than at the previous meeting. Among striking plants was a new hybrid between a *Laelia purpurata* and *Epidendrum radicans*, a successful effort of Mr. SENEZ to cross two such dissimilar genera; a new dwarf Sweet Pea resembling Burpee's *Cupid* in all save colour; some beautiful *Gladioli* which we never see so well flowered as at Langport; a beautiful group of *Watsonia Ardeni*, and the seldom seen *Exacum seylanicum macranthum*, aptly called by some the Ceylon Gentian, from its beautifully-coloured blossoms; a quantity of charming Roses from Cheshunt including the cream of English seedlings of garden varieties, and others. Lovers of fruit could not fail to admire the splendid collection of Gooseberries shown by Messrs. VERRICH & SON.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. W. Burpee, H. B. M-y, R. Dean, G. Gordon, G. Stevens, F. W. Sander, J. Hudson, J. F. McLeod, W. Bain, J. Fraser, C. E. Shea, J. Walker, C. E. Pearson, H. J. Jones, J. D. Pawle, G. Paul, D. B. Crane, E. Mawley, John Fraser, and H. Selfe-Leonard.

A considerable number of subjects came before the Floral Committee on this occasion, and a fair number of them obtained Awards of Merit. It is curious to notice, however, how many things of inferior merit find their way to the Committee table, leading to the inference that some exhibitors, at least, entertain low estimates of the improvements which have been made in the flowers they exhibit.

Gladioli formed a leading feature. Messrs. KELWAY & SON, Langport Nurseries, sent a stand of twenty-four novelties, most of which were entered for awards; prominent were *Carlton*, bright pale purple, novel and distinct in colour (Award of Merit); *J. G. Clarke*, one of the new Saunders' hybrids, large, bold, cerise in colour, the pale throat slightly spotted and flaked with purple—distinct, and very fine (Award of Merit); *Robert Kerr*, bright reddish-crimson, large in size, and striking in colour. *Sergeant Scott*, maroon flushed with crimson, one of the darkest. *Wearie Wyche*, bluish, flaked and pencilled with pale carmine, a very pleasing soft variety. *Harold Longster*, the ground colour rose, flushed and flaked with bright orange-crimson. *W. B. Child*, pale ground flaked with rosy-crimson and purple. *Jonathan Langford*, pale ground, heavily flaked with scarlet-crimson. *John Downie*, another of the new hybrids, pink, flushed with delicate cerise, the pale yellow throat marked with maroon, &c. In addition the firm had a collection of seventy-two spikes of standard varieties, chief among them such dark maroon crimson varieties as the *Shahada*, *Wellington*, *Don José*, *Chalmus* and *Nada*; and of other varieties, *John Hobhouse*, *Prince Henry*, *St. Gatien*, *Basile*, *Semolina*, *Callipho*, *Utopia*, *Empress of India*, *Priestly* (one of the best yellows), *Lady Derby*, and *Lord Swanses* (pale yellow), with others. Messrs. Kelway & Son also had *Asclepias tuberosa*, a fine bunch of this old favourite being staged; *A. syriaca*, a strong-growing but not very ornamental species; some *Gaillardias*, *Chrysanthemum maximum* sili. fers, with pure white narrow petals; boxes of cut *Gaillardias*, and boxes of bunches of hardy flowers, including *Scabiosa caucasica* alba, *Coreopsis grandiflora*, *Allium descendens*, deep crimson; *Achillea eupatorioides*, &c.

From H. B. SARTRETT, Esq., Shooter's Hill, came Sweet Pea *Pauline*, creamy-white, with buff and pale rose standards.

Mr. W. Bain, gr. to Sir Trevor Lawrence, Bart., Burford Lodge, Dorset, staged a number of new forms of hybrid *Gladioli*, among which one stood out from all the rest for its great size and beauty, viz., *General Duchesne*, rich rosy-cerise, flushed with purple on the margins of the petals, and having a conspicuous buff throat (Award of Merit); also, *Mrs. Beecher*, bright red; *Enfant du Lorraine*, yellow; *Veauve*, orange-crimson flushed with maroon, dark centre; *O. F. Quintius*, pinkish-rose, with scarlet and white markings; *W. Watson*, pale pink, with red and yellow centre; also, cut blooms of *Crinum* *Powell* and *Moore*, with spikes of the fine strain of *Pentstemon* grown at Burford.

Carnation *Mrs. Moore-Bliss*, a well-formed pale yellow self, with a good pod and habit of growth, came from the

SURREY SEED CO., Redhill; it appeared to be a good form of *Pride of Peasbush*, but does not split its calyx.

From Mr. J. Bugg, gr. to A. SHUTTLEWORTH, Esq., Eastgate House, Lincoln, came an attractive *Croton* named *Shuttleworthi*, a narrow-leaved variety of drooping growth, the ground of the leaves cream, marked with deep olive-green, and having rosy veins (Award of Merit).

Mr. G. DAVISON, Ammanford, R.S.O., sent half-a-dozen plants of bedding *Pelargonium* *Anna Bateson*, very dwarf and compact in habit, freely producing stiff, erect trusses of bright salmon double flowers, flushed with carmine (Award of Merit).

Some pretty herbaceous *Phloxes* came from several sources. Messrs. PAUL & SON, The old Nurseries, Cheshunt, had several of M. Lemoine's new varieties, such as *Lord Rayleigh*, purple, flushed with blue (the nearest approach to a blue *Phlox* we have yet seen), the tips stout and of good form (Award of Merit); *Erbenement*, bright rosy-salmon, with violet eye, very pleasing in colour, and good shape (Award of Merit); *Fantasia*, white, more or less flushed and striped with bright purple; *Huxley*, white centre, margined with lilac-pink; *Bayadere*, small white, good form; *La Neige*, white, rather purer; *La Sicle*, pale rose, with a ring of delicate purple round the eye; and *Panthéon*, salmon. Messrs. Paul & Son also had *Cineraria* *maritima* *Diamond*, a dwarf, compact, silvery-leaved form, likely to make a most useful bedding plant; *Canna* *Miss Elsie* *Parkins*, pure yellow, but not shown in its best character (Award of Merit); *Cupressus Lawsoniana erecta aurea*, which the committee wished to see again in a more developed form; the golden-leaved variety of *Ilex ovata*, the small deep green leaves, edged with gold; *Clematis viticella* *x* *uniflora*, with rosy-lilac pendent flowers, and an erect habit of growth, free-blooming; *Heliopeis Pitheriana*, deep gold, fine in colour, and of a rigid erect growth (Award of Merit); *Rosa rugosa atropurpurea*, a deep bright crimson seedling of striking character (Award of Merit); some *Gaillardias*, bunches and boxes of *Roses*, such as *H. T. Madame A. Chateau*, *Gustave Regis*, *Mrs. W. J. Grant*, *Antoine Riviere*, and *H. P. Royal Scarlet*, with bunches of hardy flowers, such as *Platycodon grandiflorum* and its white variety, *Rudbeckia purpurea*, *Acanthus longifolius*, pans of *Campanula Maritima*, and *Insula ensifolia*, &c.

Messrs. VERRICH & SON, Exotic Nurseries, Chelsea, had *Lobelia Riviere*, a delicate pink or flesh-coloured form of cardinalis; a box of cut blooms of greenhouse *Rhododendrons*, and baskets of choice shrubs, viz., *Hibiscus*, single, *Painted Lady*, white with dark centre; *H. single*, *Colestia*, pale violet-blue with crimson centre; and *H. totus albus*, pure white, each of which received an Award of Merit. In addition there were baskets of *Eucryphia pinnatifolia* with large white blossoms; *Pavia macrostachya*, two handsome variegated forms of *Acer palmatum*, *Veronica La Seduisante*, with numerous spikes of magenta-crimson flowers (Award of Merit); flowering spikes of *Spartium junceum*; *Spirea callosa atrosanguinea*, and *Cornus macrophylla*.

Messrs. F. SANDER & CO., St. Albans, had a batch of the white-flowered *Watsonia Ardeni*, *Lilium Henry*, and *L. Philippinense*, the rich blue-flowered *Exacum seylanicum* var. *macranthum*, and *Dipladenia atropurpurea*.

Mr. T. S. WARE had *Sedum maximum purpureum*, a strong growing form with deep bronzy-clarlet, thick leathery leaves; and in addition an imposing bank of hardy plants and flowers, comprising *Yucca filamentosa*, *Lilies*, *Campanula pyramidalis*, *Fraxinea*, *Aconitum*, *Carnations*, *Scabiosa caucasica*, *Chrysanthemum maximum*, &c., but few of which were named.

Messrs. BARR & SON, King Street, Covent Garden, staged two varieties of herbaceous *Phloxes*, viz., *Bouquet de St. Cyr*, white with purple-crimson centre; fine flat stout pipe, (Award of Merit); and *Leonardo de Vinci*, in much the same way, but rather paler in the centre; and in addition a bank of cut flowers, *Delphinium*, *Campanula pyramidalis* in variety, *Pentstemon*, *Montbretia*, *Hyacinthus candicans*, *Coreopsis lanceolata* and *O. grandiflora*, *Lythrum virgatum*, *Gladioli*, *Phloxes* in considerable variety, *Sweet Peas*, &c.

From Messrs. ATLER BURPEE & CO., Pennsylvania, U.S.A., came pots of Sweet Pea *Pink Cupid* in much better form than when previously produced, and in the character of dwarf compact plants well furnished with bloom, but it found no favour with the committee. This variety produces dark seeds, and is said to be of a stronger constitution than the *White Cupid*.

Messrs. HUNTER & SON, 152, Houndsditch, E.C., sent a very pretty rose-tinted form of the everlasting Pea named *Pink Beauty*, deeper in colour than the pink-striped *Delicate*, which the committee certificated some years ago.

From Messrs. W. J. STOKES & SON, Hiltop, Trowbridge, came an everlasting Pea named *Her Majesty*, which the committee regarded as identical with *Delicate*.

Messrs. H. LOW & CO., Clapton Nursery, had a group of plants of *Lilium nepalense*, and *L. Wallichianum*.

Messrs. B. HARTLAND & SON, nurserymen, Cork, sent seven large boxes of cut blooms of double and single tuberous-rooted *Begonias*, many of them of very fine quality, and the strain to all appearance equal to anything seen in this country. A very fine double yellow could be seen among them.

Messrs. DOBBIE & CO., seedsmen, Orpington and Rotham, sent a dwarf compact and exceedingly free-flowering plant of the new *Godetia Gloriosa*, deep bright crimson, a valuable addition to our summer-flowering hardy annuals (Award of Merit).

A very charming display of *Roses* in boxes and bunches came from Messrs. WILLIAM PAUL & SONS, nurserymen, Waltham Cross. It included boxes of trusses of Tea-scented

Section of vegetables, nine distinct kinds, 1st, Lady ...
Castle, Duke of Albany Pot, Beet Crimson Ball, ...
Tomato Perfection, Onion Veitch's Maincrop.

Section of vegetables, nine distinct kinds, the produce ...
Sutton & Sons, 1st prize the Sutton Cup, ...

Section of six distinct kinds, prizes offered by James Carter ...
Lady THEODORA GUEST.

Section of Vegetables, six distinct kinds, prizes offered ...
Webb & Sons, 1st, W. NICHOLSON.

Section devoted to Amateurs and Cottagers, a fine ...
flowers, fruits and vegetables were staged, ...
received full attention from the vast number of ...

SHSHELF FLORAL, HORTICUL- TURAL AND ROSE.

77.—This Society, which is affiliated with the ...
Rose and Royal Horticultural Societies of England ...
on Tuesday on the beautiful Colliery Cricket ...
at Tishelf, which lies nearly midway between ...
and Nottingham. Prizes of the value of £360, ...
medals, by the two National Societies, were ...
and produced a keen competition, and attracted a ...
number of growers from all parts of the country. ...
worth recording that, for the first time for years, this ...
which is the first of a long list in the Peak ...
was favoured with beautifully fine weather, the sun ...
gloriously throughout.

one of the features is always the groups of plants arranged ...
effect, to cover 200 ft., the 1st prize for which is £15. Nine ...
were offered, but the competition was not quite as ...
usual. Mr. Joseph Ward, gr. to Mr. T. Hoakes, J.P., ...
Huddings House, Derbyshire, was again 1st, a position he ...
occupied almost continuously for many years. It was a ...
fantastic collection, the colouring being most delightful, ...
the whole very effective. It contained chiefly Aloca- ...
Crotone, Lillums, Anthuriums, and Cocos. An amateur, ...

WILLIAM SHAKESPEARE, who has gradually risen to an ...
position in Derbyshire, was very rightly placed 2nd ...
a group slightly less in size, but furnished quite as well ...
gr. Ward's. Mr. T. J. Nelson, gr. to Mr. A. BARNES, J.P., ...
Lodge, Chesterfield, was 3rd with a nice collection, ...
however, lacked the colouring of the two preceding ...
which contained most of the same kind of plants.

W. J. WARD easily occupied the premier position for ...
six plants for dinner-table, vase of Ferns, Pines, ...
(black), Peaches, Nectrines, Melons, collection of ...
Tomatoes red, ditto yellow, ditto red or yellow, Celery ...
Vegetable Marrows, and a collection of vegetables. ...
there is added to this a few 2nds it will be admitted ...
Huddings House Gardens quite maintained their ...

W. BUTLER stood by himself with zonal and ...
Pelargoniums and Verbenas; and came in for a ...
of 2nd.

W. SHAKESPEARE got 1sts for show Pelargoniums and ...
Lilies.

W. KEMP, J. DORE, PRICE, and J. W. PLAWMAN ...
the remaining cards in the open class.

were not quite so numerous as in previous years, and ...
were no new varieties brought out. The hot, dry ...
apparently had left its mark on southern growers ...
some often conspicuous here were absent. The heavy ...
storms during the past week had not improved ...
in the Midlands, and many of them were badly ...
thundered; still, there was a grand show, and a keen ...
competition, especially between Messrs. HARKNESS, of Bedale, ...
D. MACK & SON, Catterick; and Mr. H. DICKSON, ...
Belfast, who was handicapped by the distance his blooms ...
were brought.

MESSRS. HARKNESS & SON secured the National Rose ...
Society's Gold Medal for the best seventy-two blooms, the ...
Medal for the best forty-eight blooms, and the Royal ...
Society's Medal for thirty-six blooms. The ...
Horticultural Society's Medal went to Mr. W. BOYES, ...
Loughborough; and Messrs. MERRYWEATHER, of South- ...
Hampshire, Nottingham, was awarded a special for ...
five blooms. The Rose awards were:—

One and Noisette Roses, eighteen varieties.—1st, D. & W. ...
DUNDEE; 2nd, Mr. W. BOYES; 3rd, HARKNESS & SON. ...
Seventy-two blooms, 50 distinct varieties.—1st, HARKNESS & ...
2nd, D. MACK & SON.

Forty-eight blooms, distinct varieties.—1st, HARKNESS & ...
2nd, H. DICKSON.

Thirty-six blooms, distinct.—1st HARKNESS & SON; 2nd, ...
MACK & SON.

Twenty-four blooms.—1st, W. BOYES; 2nd, R. PARKES.

Eighteen distinct varieties.—1st, M. WHITTLE; 2nd, R. E. ...
EST.

Twelve distinct varieties.—1st, M. WHITTLE; 2nd, S. PRICE. ...
There were six other classes, and the exhibits filled three ...
ge marquees.

The Society, whose income last year was £406 9s. 11d., ...
£25 2s. in hand to carry forward. Considering that the ...
was fine, it is believed that this balance will be much ...
reached.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (—) the Mean for the week ending July 24.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 3, 1897.	Below 42°, difference from Mean since Jan. 3, 1897.				
0 4 +	118	0	+ 88	— 8	2	121	21.2	34	31
1 3 +	123	0	+ 8	+ 12	2	112	15.7	35	32
20 aver	123	0	+ 74	— 78	2	102	11.9	41	34
3 2 +	143	0	+ 165	— 124	4	101	12.2	53	37
4 3 +	145	0	+ 133	— 115	1	100	14.9	40	36
5 3 +	155	0	+ 215	— 180	2	92	15.2	46	39
6 2 +	123	0	+ 49	— 21	4	121	22.5	34	33
7 3 +	139	0	+ 126	— 92	6	114	16.7	36	35
8 3 +	143	0	+ 227	— 138	3	116	22.5	22	39
9 3 +	128	0	+ 22	+ 8	3	130	22.2	17	30
10 3 +	141	0	+ 142	— 57	3	123	23.2	16	32
* 3 +	157	0	+ 299	— 80	4	126	18.6	49	41

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending July 24, is furnished from the Meteorological Office:—

"The weather during this week has been very changeable, fine and dry conditions having alternated with heavy local rains and sharp thunderstorms.

"The temperature exceeded the mean in all districts excepting 'England, N.E.,' the excess ranging from 3° in most districts to 4° in 'Scotland, N.' The highest of the maxima were registered either on the 18th or 24th, and ranged from 89° in 'England, E.,' 84° in the 'Midland Counties,' and 83° in 'England, S.,' to 77° in 'Scotland, W.,' and 75° in 'Ireland, S.' The lowest of the minima were recorded during the earlier days of the period, and varied from 40° in 'Scotland, W.,' and 42° in 'England, E.,' to 51° in 'England, S.,' and 57° in the 'Channel Islands.'

"The rainfall varied greatly in different parts of the kingdom, and even in different parts of the various districts. On the north side of London there was a particularly heavy fall of hail and rain on the 21st. The totals were rather more than the mean over Ireland, 'England, S.W.,' the 'Midland Counties,' and 'Scotland, E.,' but less than the mean elsewhere.

"The bright sunshine exceeded the mean at most of the northern, eastern, and southern stations, but showed a deficiency in most of the western districts. The percentage of the possible duration ranged from 53 in 'England, E.,' 49 in the 'Channel Islands,' and 46 in 'England, S.,' to 22 in 'England, S.W.,' 17 in 'Ireland, N.,' and 16 in 'Ireland, S.'"

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Carnations and Picotees.—The propagation of these plants should be taken in hand forthwith; and although they may be easily struck from cuttings in frames on hotbeds, the simplest method is to layer them in the open ground. The flowering this year being generally later than usual, no time should be lost in getting the layering finished as soon as possible, so as to obtain strong plants by planting-time. Previous to beginning to layer, slightly loosen the surface-soil round the plants with a handfork, make a sufficient number of hooks from Birch, bracken-stems, wire, &c., about 5 inches in length; and provide

a quantity of sifted moderately light soil for putting around the layers, so as to hasten the formation of roots. For this purpose the refuse of the potting-bench, mixed with a small quantity of loam a year or longer in stack, and well-rotted leaf-mould, make a very suitable mixture. If the shoots on a plant are many, the upright growths in the centre of the plant should be left untouched, and about six of the outer and more-conveniently-placed shoots used as layers. From these strip off the bottom leaves, so as to leave a bare space of 2 to 4 inches, and with a sharp knife cut half-way through the shoot on its lower side, and just below a joint or node, and passing the blade upwards through one or two joints, open the "tongue" thus made, and press the shoot gently into the soil, so as to keep the parts separated, and fix the shoot in an erect position, with a hook pressed home firmly but gently on to the stem. Place the prepared soil around each plant, so as to form a saucer-like depression, and snip off the points of every shoot that has been layered. Where the old plants are rather closely planted, the entire surface of the bed may be covered with soil, and layering and rooting greatly facilitated. Apply water, and sprinkle the layers if the day has been bright, and rain is not imminent. The layers should be fit for planting in pots or the open border in about eight weeks from the time of layering.

Alstroemerias.—Tuberous-rooted perennials which, if planted deeply in good soil that has been trenched 2 to 3 feet deep, and dressed at several depths with rotten dung, afford large quantities of beautiful flowers for many years without any further attention than a yearly top-dressing, or a heavy watering with mild liquid-manure whilst in the height of their growth. The plant does best in a sandy-loam and a warm position, and the roots being not less than 1 foot below the surface are safe from frost. The cut blooms last long in water, making them invaluable for room decoration. A variety named Bertha with flowers of a pinkish tinge has been in flower at Dropmore for some weeks; the plant has stems 15 to 18 inches high. A. aurea is a taller grower, a valuable Chilean species with orange-coloured blooms; A. psittacina is a pretty species with scarlet and green flowers; A. pelegrina, A. p. alba, A. versicolor, and A. bœmantha are all very desirable species. The roots of the Alstroemeria should be purchased or obtained early in the autumn, potted up and stood in a cold frame through the winter, and planted out in good and well-drained ground in the spring to become established. Small pieces turned out of 6-inch pots three years ago have now made fine clumps, and become very effective in the borders.

Border Chrysanthemums will require copious supplies of water, otherwise the foliage will become yellow and unsightly and the flowers poor. Some varieties, especially Flora, are already in flower. If cut, these plants break readily from below, and will produce a good supply of blooms later.

MARKETS.

COVENT GARDEN, JULY 29.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½ bushel	1 9-3 0	Grapes, Muscats,	
Cherries, Morellos,		2nd quality,	
per ½-bushel	8 0-12 0	per lb.	1 6-3 0
Currents, Black,		Melons, each	2 0-3 0
per half-bush.	7 6-8 0	Nectarines, select.	
— Red, per ½ bush.	4 0-5 0	— fruit, per doz.	10 0-12 0
— White, ½ bush.	6 0-9 0	— Medium, per	
Figs, per doz.	1 0-2 0	doz.	3 0-4 0
Gooseberries, half-		— Seconds, p. doz.	1 6-2 0
bushel	3 6-4 0	Peaches, selected	
Grapes, Gros Col-		— fruits, per doz.	6 0-8 0
mar, per lb.	1 6-2 0	— Medium, per	
— Alicante, p. lb.	1 3-1 9	doz.	2 6-3 0
— Hamburgs,		— Seconds, per	
selected, per lb.	1 6-3 0	dozen	1 6-2 0
— 2nd quality,		Pears, ½ bushel	2 0-2 3
per lb.	1 0 —	Pine-apples, St. Mi-	
— Muscats, "Cam-		chael, each	5 0-6 0
non Hall," p. lb.	4 0-5 0	Raspberries, per	
— Muscats, select,		dozen 1 lb. pun-	
per lb.	3 0-4 0	nets	4 0-6 0

Enchantress, Empress Alexander of Russia, Sylph and Madame Sablayrolles; also fine bunches of Nabonnand, pale ground flushed with rose, a very free flowering and most useful garden Rose (Award of Merit), Madame Chateaucy, Francois, Duboull, Souvenir de Madame Levot, Souvenir de Lady Ashburton, Souvenir de President Carnot, a most interesting exhibit.

Messrs. CHAL & SON, Longfield Nursery, Crawley, had boxes of cut blooms of Cactus, Pompon and single Dahlias in fine character, showing that the Dahlia season is near at hand.

Mr. H. B. MAY, Dyson's Lane Nurseries, Edmonton, staged a characteristically fine display of Ferns in great variety, and showing skilful cultivation.

From Messrs. H. CANNELL & SONS, Home of Flowers, Swanley, came an extensive collection of Cacti, Echinocacti, &c., similar in regard to species and varieties to what this firm showed last year about this date.

Mr. WRIGHT, Superintendent of the Royal Horticultural Society's Garden, made a very obviously required innovation in the arrangement of the exhibits, in placing a quantity of plants from Mr. H. J. JONES, Ryecroft Nursery, Lewisham, as a long group of irregular outline on the floor of the hall, in place of the usual central table; and most of the plants of which it consisted being under 4 feet in height, it allowed them to be inspected very readily—moreover, the effect was decidedly pleasing. The group was mainly made up of tuberous Begonias, Lilies, Ferns, small Palms, &c. An award of a Gold Medal was made.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, H. Ballantine, F. W. Moore, F. J. Thorne, W. H. Young, H. J. Chapman, E. Ashworth, E. Hall, W. Cobb, and S. Courtland.

Messrs. JAMES VEITCH & SONS, Royal Exotic Nursery, King's Road, Chelsea, exhibited a new and very remarkable hybrid raised by them, viz., *Epilaelia* × *radiceo-purpurata* (*Epidendrum radicans* ♂, *Laelia purpurata* ♀), which, like the *Epilaelia* × *matutina*, retains the habit of the male parent. The flowers, which in a great degree resembled those of *Epiphronitis Veitchii*, are about 2 inches at their greatest width; the sepals and petals of a pretty light orange-scarlet; the broadly-ovate lip clear yellow at the base, the outer zone being light purple. The remarkable cross was awarded a First-class Certificate.

Messrs. VEITCH also showed *Epidendrum radicans*, one of the parents of the hybrid; the pretty light rose *Phalenopsis* × *Hebe* (*Sanderiana* × *rosea*); *Laelio-Cattleya* × *Clonia*, of very fine form and rich colour; *Cattleya* × *Atalanta* (*Leopoldi* ♂, *Warszewiczii* ♂), a very handsome flower with light rose-coloured sepals and petals, the former tinged with buff; and soft purplish rose labellum; and *Sobralia* × *Veitchii*, a very delicately tinted blush-white flower with clear yellow centre.

ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow, Cheshire (gr., Mr. Holbrook), was awarded a Silver Flo a Medal for a splendid collection of cut spikes of *Cattleyas*, among which were sixteen very fine forms of *C. Warszewiczii*, chiefly of the very dark crimson-lipped strain; some *C. Mendellii*, of which *C. M. delicata* was an almost wholly white form; *C. Rex*, and *Laelio-Cattleya* × *Schilleriana*.

Mr. ASHWORTH also showed a plant in flower of *Cattleya Warszewiczii*, "Mrs. E. Ashworth," one of the most distinct and delicate forms yet seen. Its flower is fine in size and shape, and, lip included, almost wholly of a delicate bluish-white tint, the only other colour being a yellow tinge in the centre, and a very slight lilac mark in front of the lip (Award of Merit).

Messrs. HUGH LOW & CO., Clapton, staged a small group composed of two fine *Cattleya Warszewiczii*, the one with five and the other with six flowers on a spike; *C. Gaskelliana* Sunray, a very pretty variety with purple feather on the petals and lower sepals; *Odontoglossum crispum rotundiflorum*, a good flower with a few cinnamon-brown blotches; *Cypripedium* × *Brilliant*, much resembling *C. × Alfred Hollington* (*elliptica* × *philippinense*); *C. × Chas. Canham*, and *C. × cananthum superbum*; also, their *Bulbophyllum Claptonense*.

Messrs. F. SANDER & CO., St. Albans, showed *Angraecum Elchlerianum*, Vanilla-like in growth, and bearing solitary flowers of good size, with white labellum bearing a green spur; and pale green sepals and petals. *Miltonia vexillaria rubella melanocentra*, having the small flowers of rubella, but with remarkably rich dark markings on the lip; *Vanda Hookeriana*, *Bifrenaria aurantiaca*, and the singular *Masdevallia Gargantua*.

Frau IDA BRANDT, Riesbach, Zurich (gr., Mr. Schlecht), sent cut examples of *Odontoglossum Schleiperianum* citrinum, *Epidendrum raniflorum*, *E. coelestium*, *Colax jugosus*, *Cattleya Rex*, *Trichocentrum porphyreum*, &c.

Major JOICEY, Sunningdale Park, Sunningdale (gr., Mr. Fred. Thorne), sent *O. longissimum* Schleiperianum with three strong spikes; *O. s. citrinum*, and the elegant *O. aspidorhinum*, Lehmann, with three fine spikes.

J. H. KITSON, Elmet Hall, Leeds (gr., Mr. Bonsall), showed *Cypripedium leucocentrum*, like a form of *C. bellatulum*, but with white lip.

J. F. ERNER, Esq., Woodlands, Beckenham (gr., Mr. A. Waite), showed *Cypripedium* × *Chapmani* (*bellatulum* × *Curtisii*), a very fine hybrid, recently exhibited on several occasions by the raiser, Mr. H. J. Chapman, gr. to R. I. Measures, Esq., who received a First-class Certificate for it.

Fruit and Vegetable Committee.

Present: P. Crowley, Esq., Chairman; Rev. W. Wilks, Secretary; and Messrs. J. Cheal, A. F. Barron, Saltmarsh, James Veitch, G. W. Cummins, A. Dean, W. Bates, W. Farr, G. H. Sage, G. Wythes, F. Q. Lane, J. Smith, Robert Fife, J. Willard, and W. J. Empson.

Messrs. J. VEITCH & SONS sent fruits of Nectarine Précoce de Crocels from pot plants grown in a cool-house, not large, but well-coloured, and of fair flavour; flesh somewhat clinging to the stone. It is undoubtedly early, but seems to be best when assisted by heat. An Award of Merit was granted on a show of hands by seven votes against five.

Huge samples of Sea Eagle Peach came from Mr. D. McAINSH, Leeds Castle Gardens, Maidstone. The variety favours Noblesse in shape and paleness, but is not a high-class variety. It seems, so far, not to have received any award, although a long time in commerce. A Cultural Commendation was given.

Mr. J. TAYLOR, Hardwicke Grange, Shrewsbury, sent seedling Melon Hardwicke Beauty, handsome and yellow, with thick soft scarlet flesh. The fruit seemed to have been kept several days, and, though of good flavour, yet was a little flat. It was agreed a fresh cut fruit should be asked for at a later meeting. The one sent bore great resemblance to Blenheim Orange.

A Melon was sent by Mr. James Hudson, gr. to the Messrs. ROTHSCHILD, Gunnersbury House. It was very long, oval in shape, of fair size, and handsome, also scarlet-fleshed. It was the product of a cross between Golden Perfection and Blenheim Orange. The fruit proved not to be in good condition.

Mrs. CUNDEY, Warren House, Cobham, sent bunches of the Japanese Wine-berry.

Messrs. W. J. STOKES & SONS, Trowbridge, sent fine pods of a Pea named Hero of Trowbridge, not unlike Duke of Albany. It was said to have been previously grown at Chiswick.

Messrs. KELWAY & SONS, Langport, had dishes of Bunyard's Exhibition Longpod Bean and Duke of Albany Pea, very fine samples. A Vote of Thanks was given.

Messrs. JAS. CARTER & CO. staged a collection of eighteen varieties of garden Turnips; some of the samples were rather old, but so far these roots have been universally of indifferent quality. The best were, of whites, Early Model, Jersey Lily, and Stone; the Red-top Stone was the best of its section. Golden Ball of the yellows, and the red Radish Turnip, Cardinal, was also represented. Several of the varieties were of the Early Dutch or Milan form, and too flat to find popular favour.

Messrs. JAS. VEITCH & SONS sent a splendid and most instructive collection of 100 varieties of Gooseberries, all set up in square shallow boxes lined with leaves. They presented a capital representation of all the best varieties in commerce, and included, of reds, large Clayton, Rough Red, Iskander Bey, Conquering Hero, Crown Bob, Industry, Dan's Mistake, Lion's Provider, Speedwell, and others. Of greens, Telegraph, Surprise, Peerless, Ransom, Gretna Green, and Tom Joiner. Of yellows, Coiner, Mount Pleasant, Trumpeter, High Sheriff, Broom Girl, Pretty Boy, Gipsy Queen, and Railway; and of whites, Progress, Eve, and Whitesmith. Of small, highly-flavoured varieties the best were, Ironmonger, Champagne, and Keen's Seedling, red; Pittmaster Green Gage, Early Green Hardy and Green Walnut, and of yellows Golden Drop, Yellow Smith, and Yellow Champagne. The firm also showed fine Negro Largo Figs, Morello Cherries, Transparent White, White Dutch, and the finer White Dutch cut-leaf Currants, and La Constante, La Versaillaise, Warner's Grape, and other Red Currants. A Silver-gilt Knightian Medal was to this collection unanimously awarded.

Mr. G. WYTHES sent from Syon Gardens Pear St. Swithun, like the old Windsor in form, but worthless for table; and Apples, Irish Peach and Red Quarrendon for the flavour competition, but no award was made.

TRENTHAM AND HANFORD HORTICULTURAL.

JULY 22.—The ninth, and hitherto the best show of the above society, was held in Trentham Gardens on the above date. The Duchess of Sutherland, the Dowager Countess ROSELYN, and a numerous house party, graced the proceedings by their presence, and visitors came in thousands.

The Roses were superb and numbered several thousands. The Tea Roses were declared by the judges to be the best they had seen this season. The Very Rev. Dean Hole of Rochester acted as judge of the Roses, having been specially invited by the Duchess of Sutherland for the occasion.

The show of fruit was large and good; and the dinner-tables arranged with flowers and fruit have seldom been equalled at any exhibition. The competition was so keen that the Royal Horticultural Society's standard of judging by points had to be strictly followed out, even with this help there was very little between the 1st, 2nd, and 3rd.

Of the groups of plants arranged for effect, six competitors brought together and arranged very fine groups.

The non-competitive exhibits were numerous. Mr. Goodacre, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby, put up a fine group of magnificent Souvenir de la Malmaison Carnations, in light and dark coloured varieties, consisting of fifty plants, carrying about 500 blooms, the group being backed with Bamboos, and edged with Maiden-hair Ferns. A Silver Medal was awarded.

Silver Medals were also awarded to HENRY ECKFORD, Wem, Salop, for fifty varieties of Sweet Peas, including the new Duchess of Sutherland, Lady Muriel Hamilton, La Skelmersdale, and Colonelist, all good and distinct. To Messrs. WALLACE & CO., Colchester, for a fine collection of Lilies; Messrs. PATCHARD & SONS, Shrewsbury, for fifty varieties of Carnations; to Messrs. DICKSONS & SONS, Chester, sixty-five bunches of cut flowers, and several boxes of Rose to Mr. J. H. WHITE, Worcester, for fifty varieties of herbaceous plants, twenty bunches of border Carnations, a twenty varieties of Sweet Peas; to Messrs. J. LAISO & SON, Forest Hill, London, for a grand collection of Begonia Caladiums, Sweet Peas, and Carnations; to Messrs. WESS SONS, Stourbridge, for a collection of vegetables; to Messrs. JONES & SONS, Shrewsbury, for Sweet Peas, effective shown in baskets, and Cactus Dahlias; to Messrs. EDWARDS & SON, Shrewsbury, for ornamental stands and Ferns.

The show of cottagers' produce was exceptionally good. The Duchess of SUTHERLAND, in opening the show, made special reference to this section.

Group of miscellaneous plants, in or out of bloom, arranged for effect, occupying 300 square feet, 1st, Mr. C. J. M. Sherwood, Notts, whose group contained Kentias, Sugarcanes, fine Crotons, Bamboos, Pitcher-plants in variety, Alocasias, Orchids in variety, some fine *Odontoglossum* Anthuriums in variety, Begonias, and a good number of the alpine-bead plant, *Nertera depressa*, Ferns, &c.; 2nd, Messrs. J. JENKINS & SONS, Newcastle, Staffordshire, whose group contained a number of *Phalenopsis* and *Cattleyas*; 3rd, Duke of ST. ALBANS.

Class 2, open to persons who do not employ more than one gardener: 1st, Mr. F. J. MADDOCK, Alsayer; 2nd, Mr. C. JONES, Stoke.

Roses, forty-eight distinct, single blooms, 1st, Messrs. HARKNESS & SONS, Bedale, whose stand contained excellent blooms; 2nd, Messrs. A. DICKSON & SONS, Newtownards.

There were numerous other classes for Roses, the enumeration of which would be tedious.

FRUIT AND VEGETABLES.

Decorated table, with ripe fruit, not to exceed six dishes, and not fewer than ten, and not more than two distinct varieties of a kind, each table to be covered with white cloth; silver, electro-plated wine-glasses and decanters excluded.—1st, Sir J. W. PEASE, Bart., Hutton Hall (gr. Mr. McIndoe, whose arrangement of the exhibit, and the quality, have seldom been equalled. The flowers consisted of small bright-coloured Carnations and Plectranthus with Asparagus and Pancratiums. The fruit comprised Black Hamburg Grapes, large both in bunch and berry, and well coloured; two well-grown bunches of Chasselas Napoleon, highly coloured; a well-ripened truss of Pananas, a good Pine-apple, Scarlet Melon, Alexander Noblesse and Grosse Mignonne Peaches Stanwick Elruge, and Spencer Nectarines; Souvenir de Congrès Pears, Negro Largo and Brown Turkey Figs, Prime Englebert Plums, Gunton Park Strawberries, and Duchess of Gloucester Apples. 2nd, Earl of HARRINGTON (gr. Mr. Goodacre), whose collection consisted of Souvenir de la Malmaison Carnations, beautifully arranged; good Black Hamburg and Muscat of Alexandria Grapes, two Melons, fine Noblesse and Bellegarde Peaches, Lord Napier and Pine-apple Nectarines, Elton Pine and Waterloo Strawberries, Brown Turkey Figs, Beauty of Bath and Red Astrakhan Apples, and a good Queen Pine, and McLaughlin's Gage Plum; 3rd, Duke of ST. ALBANS, whose exhibit was a very fine one.

Collection of six kinds of fruit.—1st, Sir J. W. PEASE, Bart., with fine Muscat of Alexandria and Black Hamburg Grapes, Negro Largo Figs, Spencer Nectarines, Early Transparent Gage Plums, and Alexandria Noblesse Peaches; 2nd, Lady HENRY SOMERSET (gr. Mr. F. Harris). No fewer than seven competitors staged in this class, and all good.

Of Grapes, the exhibits were excellent. For four bunches, two distinct varieties, 1st, Baron ROTHSCHILD (gr. Mr. Reynolds), Gunnersbury Park, who staged grand Black Hamburgs and Madresfield Court, finely finished; 2nd, Lord BAGOT (gr. Mr. Bunneman), with Duke of Bucklebury and Black Hamburg.

Grapes, three bunches, Black Hamburg.—1st, W. D. Lowe, Esq., Derby; 2nd, Baron ROTHSCHILD.

Grapes, three bunches, black, any other variety.—1st, Baron ROTHSCHILD, with Madresfield Court; 2nd, J. C. WATERHOUSE, Esq.

Grapes, three bunches, Muscat of Alexandria.—1st, Baron ROTHSCHILD; 2nd, Lord BAGOT.

Grapes, white, three bunches, any other variety, 1st, Baron ROTHSCHILD; 2nd, Lord BAGOT.

Grapes, two bunches, black and white, 1st, Baron ROTHSCHILD; 2nd, Lord BAGOT.

Melon, green or white-fleshed, 1st, Earl of HARRINGTON with Countess.

Melon, scarlet-fleshed, 1st, B. T. FITZHERBERT, Swynerton Park (gr. Mr. Turner), with Royal Ascot.

Peaches, dish of six, 1st, Lady HENRY SOMERSET, with Bellegarde; 2nd, Earl of HARRINGTON, with same variety.

Nectarines, dish of six, 1st, Sir J. W. PEASE, with Spencer; 2nd, Baron ROTHSCHILD, with Stanwick Elruge.

Strawberries, dish of thirty six, 1st, Lord BARNARD, with James Veitch; 2nd, Duke of SUTHERLAND, with Waterloo.

Dish, twelve Tomatos, 1st, J. McPHAIL, with Comet; 2nd, Duke of ST. ALBANS.

Cherries, dish of fifty, 1st, Lady H. SOMERSET; 2nd, Baron ROTHSCHILD.

Cucumbers, brace, 1st, Lord BAGOT; 2nd, J. C. WATERHOUSE.

Collection of vegetables, nine distinct kinds, 1st, Lady THEODORA GUEST (gr., Mr. Wilkins), who staged fine Potato Windsor Castle, Duke of Albany Pear, Beet Crimson Ball, Magnum Bonum Cauliflower, Cucumber Progress, Carrots New Red, Tomato Perfection, Onion Veitch's Maincrop.

Collection of vegetables, nine distinct kinds, the produce seeds supplied by Sutton & Sons, 1st prize the Sutton Cup, Lady THEODORA GUEST.

Vegetables, six distinct kinds, prizes offered by James Carter & Co., 1st, Lady THEODORA GUEST.

Collection of Vegetables, six distinct kinds, prizes offered by Messrs. Webb & Sons, 1st, W. NICHOLSON.

In the section devoted to Amateurs and Cottagers, a fine collection of flowers, fruits and vegetables were staged, which received full attention from the vast number of visitors to the show.

TIBSHLEF FLORAL, HORTICULTURAL AND ROSE.

JULY 27.—This Society, which is affiliated with the National Rose and Royal Horticultural Societies of England was held on Tuesday on the beautiful Colliery Cricket ground at Tibshelf, which lies nearly midway between Chesterfield and Nottingham. Prizes of the value of £360, and medals, and medals, by the two National Societies, were offered, and produced a keen competition, and attracted a tremendous number of growers from all parts of the country. It is worth recording that, for the first time for years, this exhibition, which is the first of a long list in the Peak county, was favoured with beautifully fine weather, the sun shining gloriously throughout.

One of the features is always the groups of plants arranged for effect, to cover 200 ft., the 1st prize for which is £15. Nine prizes were offered, but the competition was not quite as keen as usual. Mr. Joseph Ward, gr. to Mr. T. HOAKES, J.P., of Riddings House, Derbyshire, was again 1st, a position he has occupied almost continuously for many years. It was a light fantastic collection, the colouring being most delightful, and the whole very effective. It contained chiefly Alocasia, Crotons, Lilliums, Anthuriums, and Cocos. An amateur, Mr. WILLIAM SHAKESPEARE, who has gradually risen to an eminent position in Derbyshire, was very rightly placed 2nd with a group slightly less in size, but furnished quite as well as Mr. Ward's. Mr. T. J. NELSON, gr. to Mr. A. BARNES, J.P., of Ashgate Lodge, Chesterfield, was 3rd with a nice collection, which, however, lacked the colouring of the two preceding though containing most of the same kind of plants.

Mr. J. WARD easily occupied the premier position for Ferns, six plants for dinner-table, vase of Ferns, Pines, roses (black), Peaches, Nocturnes, Melons, collection of 1, Tomatoes red, ditto yellow, ditto red or yellow, Celery (red), Vegetable Marrows, and a collection of vegetables. When there is added to this a few 2nds it will be admitted that Riddings House Gardens quite maintained their reputation.

Mr. W. BUTLER stood by himself with zonal and variegated Pelargoniums and Verbenas; and came in for a sprinkling of 2nds.

Mr. W. SHAKESPEARE got 1st for show Pelargoniums and Fuchsias.

Messrs. W. KEMP, J. DORE, PRICE, and J. W. FLOWMAN divided the remaining cards in the open class.

Roses were not quite so numerous as in previous years, and there were no new varieties brought out. The hot, dry summer apparently had left its mark on southern growers and some often conspicuous here were absent. The heavy thunder-storms during the past week had not improved matters in the Midlands, and many of them were badly weathered; still, there was a grand show, and a keen competition, especially between Messrs. HARKNESS, of Bodale, Yorks; D. MACK & SON, Catterick; and Mr. H. DICKSON, of Belfast, who was handicapped by the distance his blooms were brought.

Messrs. HARKNESS & SON secured the National Rose Society's Gold Medal for the best seventy-two blooms, the Silver Medal for the best forty-eight blooms, and the Royal Horticultural Society's Medal for thirty-six blooms. The other Horticultural Society's Medal went to Mr. W. BOYES, of Loughborough; and Messrs. MERRYWEATHER, of Southwell Nurseries, Nottingham, was awarded a special for twelve blooms. The Rose awards were:—

Ten and Noisette Roses, eighteen varieties.—1st, D. & W. COLL, Dundee; 2nd, Mr. W. BOYES; 3rd, HARKNESS & SON. Seventy-two blooms, 50 distinct varieties. 1st, HARKNESS & SON; 2nd, D. MACK & SON.

Forty-eight blooms, distinct varieties.—1st, HARKNESS & SON; 2nd, H. DICKSON.

Thirty-six blooms, distinct.—1st, HARKNESS & SON; 2nd, R. MACK & SON.

Twenty-four blooms.—1st, W. BOYES; 2nd, R. PARKER.

Eighteen distinct varieties.—1st, M. WHITTLE; 2nd, R. E. WEST.

Twelve distinct varieties.—1st, M. WHITTLE; 2nd, S. PRICE. There were six other classes, and the exhibits filled three large marquees.

The Society, whose income last year was £406 8s. 11d., had £3 2s. in hand to carry forward. Considering that the day was fine, it is believed that this balance will be much increased.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					Inch.	Ina.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (−) the Mean for the week ending July 24.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 3, 1897.	Below 42° difference from Mean since January 3, 1897.				
0	4 +	118	0	+ 88	— 8	2	131	21.2	34
1	3 +	123	0	+ 8	+ 12	2	112	15.7	35
2	2 +	123	0	+ 74	— 78	2	102	11.9	41
3	2 +	143	0	+ 165	— 124	4	101	12.3	53
4	3 +	145	0	+ 133	— 115	1	100	14.9	40
5	3 +	155	0	+ 215	— 180	2	92	15.2	46
6	2 +	123	0	+ 49	— 21	4	121	22.5	34
7	3 +	139	0	+ 126	— 92	6	114	16.7	36
8	3 +	143	0	+ 227	— 138	3	116	22.5	22
9	3 +	128	0	+ 23	+ 8	3	130	22.2	17
10	3 +	141	0	+ 142	— 57	3	123	23.2	16
11	3 +	157	0	+ 299	— 80	4	126	18.6	49

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending July 24, is furnished from the Meteorological Office:—

"The weather during this week has been very changeable, fine and dry conditions having alternated with heavy local rains and sharp thunderstorms.

"The temperature exceeded the mean in all districts excepting 'England, N.E.,' the excess ranging from 3° in most districts to 4° in 'Scotland, N.' The highest of the maxima were registered either on the 18th or 24th, and ranged from 86° in 'England, E.,' 84° in the 'Midland Counties,' and 83° in 'England, S.,' to 77° in 'Scotland, W.,' and 75° in 'Ireland, S.' The lowest of the minima were recorded during the earlier days of the period, and varied from 40° in 'Scotland, W.,' and 42° in 'England, E.,' to 51° in 'England, S. and S.W.,' and to 57 in the 'Channel Islands.'

"The rainfall varied greatly in different parts of the kingdom, and even in different parts of the various districts. On the north side of London there was a particularly heavy fall of hail and rain on the 21st. The totals were rather more than the mean over Ireland, 'England, S.W.,' the 'Midland Counties,' and 'Scotland, E.,' but less than the mean elsewhere.

"The bright sunshine exceeded the mean at most of the northern, eastern, and southern stations, but showed a deficiency in most of the western districts. The percentage of the possible duration ranged from 53 in 'England, E.,' 49 in the 'Channel Islands,' and 46 in 'England, S.,' to 22 in 'England, S.W.,' 17 in 'Ireland, N.,' and 16 in 'Ireland, S.'"

THE FLOWER GARDEN.

By CHARLES HERBIN, Gardener, Dropmore, Maidenhead.

Carnations and Picotees.—The propagation of these plants should be taken in hand forthwith; and although they may be easily struck from cuttings in frames on hotbeds, the simplest method is to layer them in the open ground. The flowering this year being generally later than usual, no time should be lost in getting the layering finished as soon as possible, so as to obtain strong plants by planting-time. Previous to beginning to layer, slightly loosen the surface-soil round the plants with a handfork, make a sufficient number of hooks from Birch, bracken-stems, wire, &c., about 5 inches in length; and provide

a quantity of sifted moderately light soil for putting around the layers, so as to hasten the formation of roots. For this purpose the refuse of the potting-bench, mixed with a small quantity of loam a year or longer in stack, and well-rotted leaf-mould, make a very suitable mixture. If the shoots on a plant are many, the upright growths in the centre of the plant should be left untouched, and about six of the outer and more-conveniently-placed shoots used as layers. From these strip off the bottom leaves, so as to leave a bare space of 2 to 4 inches, and with a sharp knife cut half-way through the shoot on its lower side, and just below a joint or node, and passing the blade upwards through one or two joints, open the "tongue" thus made, and press the shoot gently into the soil, so as to keep the parts separated, and fix the shoot in an erect position, with a hook pressed home firmly but gently on to the stem. Place the prepared soil around each plant, so as to form a saucer-like depression, and snip off the points of every shoot that has been layered. Where the old plants are rather closely planted, the entire surface of the bed may be covered with soil, and layering and rooting greatly facilitated. Apply water, and sprinkle the layers if the day has been bright, and rain is not imminent. The layers should be fit for planting in pots or the open border in about eight weeks from the time of layering.

Alstromerias.—Tuberous-rooted perennials which, if planted deeply in good soil that has been trenched 2 to 3 feet deep, and dressed at several depths with rotten dung, afford large quantities of beautiful flowers for many years without any further attention than a yearly top-dressing, or a heavy watering with mild liquid-manure whilst in the height of their growth. The plant does best in a sandy-loam and a warm position, and the roots being not less than 1 foot below the surface are safe from frost. The cut blooms last long in water, making them invaluable for room decoration. A variety named Bertha with flowers of a pinkish tinge has been in flower at Dropmore for some weeks; the plant has stems 15 to 18 inches high. A. aurea is a taller grower, a valuable Chilian species with orange-coloured blooms; A. peittacina is a pretty species with scarlet and green flowers; A. pelegina, A. p. albida, A. versicolor, and A. hemantha are all very desirable species. The roots of the Alstromeria should be purchased or obtained early in the autumn, potted up and stood in a cold frame through the winter, and planted out in good and well-drained ground in the spring to become established. Small pieces turned out of 6-inch pots three years ago have now made fine clumps, and become very effective in the borders.

Border Chrysanthemums will require copious supplies of water, otherwise the foliage will become yellow and unsightly and the flowers poor. Some varieties, especially Flora, are already in flower. If out, these plants break readily from below, and will produce a good supply of blooms later.

MARKETS.

COVENT GARDEN, JULY 29.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, ½ bushel	1 9-3 0	Grapes, Muscats,	
Cherries, Morellos,		2nd quality,	
per ½-bushel	8 0-12 0	per lb.	1 6-2 0
Currants, Black,	7 6-8 0	Melons, each	2 0-3 0
— Red, per ½ bush.	4 0-5 0	Nectarines, select,	
— White, ½ bush.	6 0-9 0	fruit, per doz.	10 0-12 0
Figs, per doz.	1 0-2 0	— Medium, per	
Gooseberries, half-		doz.	3 0-4 0
bu. hel.	3 6-4 0	— Seconda, p. doz.	1 6-2 0
Grapes, Gros Col-		Peaches, selected	
mar, per lb.	1 6-2 0	fruits, per doz.	6 0-8 0
— Alicante, p. lb.	1 8-1 9	— Medium, per	
— Hamburg,		doz.	2 6-3 0
— selected, per lb.	1 6-3 0	— Seconda, per	
— 2nd quality,		dozen	1 6-2 0
per lb.	1 0	Pears, ½ bushel	2 0-2 3
— Muscats, "Can-		Pine-apples, St. Mi-	
non Hall," p. lb.	4 0-5 0	chael, each	5 0-6 0
— Muscats, select,		Raspberries, per	
per lb.	8 0-4 0	dozen 1 lb. pun-	
		nets	4 0-5 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Hellebore, dozen 4 0-6 0
Aspidistra, per doz. 12 0-30 0	Hydrangea, per doz. 8 0-10 0
— specimen, each 5 0-15 0	Lilium, various, per dozen 12 0-18 0
Calceolarias, dozen 4 0-8 0	— per dozen 8 0-4 0
Cockscombs, dozen 2 0-4 0	— per dozen 8 0-4 0
Coleus, per doz. 3 0-4 0	— per dozen 8 0-4 0
Dracenas, each 1 0-7 6	— per dozen 8 0-4 0
— various, p. doz. 12 0-24 0	— per dozen 8 0-4 0
Evergreen Shrubs, in variety, doz. 6 0-24 0	— per dozen 8 0-4 0
Ferns, small, doz. 1 0-2 0	— per dozen 8 0-4 0
— various, doz. 5 0-12 0	— per dozen 8 0-4 0
Ficus elastica, each 1 0-7 6	— per dozen 8 0-4 0
Foliage plants, doz. 12 0-36 0	— per dozen 8 0-4 0
Fuchsia, per doz. 4 0-6 0	— per dozen 8 0-4 0

Bedding Plants and Roots for the Garden in variety coming very good.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, p. 12 blooms 2 0-4 0	Mignonette, per doz. bunches 2 0-4 0
Bouvardias, per bn. 0 4-0 6	Myosotis, or Forget-me-Not, 12 bunch 1 6-3 0
Carnations, pr. doz. blooms 0 9-2 0	— per doz. bun. 4 0-6 0
Corn Daisy, per doz. bunches 1 6-2 0	— per doz. bun. 4 0-6 0
Cornflowers, per doz. bunches 1 6-2 0	— per doz. bun. 4 0-6 0
Eucharis, per dozen 2 0-4 0	— per doz. bun. 4 0-6 0
Gardenias, per doz. blooms 2 0-4 0	— per doz. bun. 4 0-6 0
Glaucolus, various, per doz. bunches 4 0-9 0	— per doz. bun. 4 0-6 0
Lilium candidum, per dozen 1 0-1 6	— per doz. bun. 4 0-6 0
Lilium Martini, per doz. blooms 2 0-3 0	— per doz. bun. 4 0-6 0
Lily of the Valley, dozen sprays 1 0-2 0	— per doz. bun. 4 0-6 0
Maidenhair Fern, per 12 bunches 4 0-8 0	— per doz. bun. 4 0-6 0
Marguerites, per 12 bunches 2 0-4 0	— per doz. bun. 4 0-6 0

ORCHID-BLOOM in variety.

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. 1 0 —	Mushrooms (Indoor) per lb. 1 0-1 3
Beans, Broad, per bushel 1 6 —	Peas, per bushel 2 0-4 6
— French, per bushel 3 0 —	Salad, small, per doz. punnets 1 6 —
— Scarlet Runner, per bushel 3 0 3 6	— Medium, doz. 2 0-3 0
Cucumbers, home-grown, select, per doz. 2 6-3 0	— Seconds, doz. 2 0 —
— India, per dozen 1 0-1 6	Vegetable Marrows, per dozen 1 6-2 0

POTATOES.

Supplies moderate; demand limited on account of warm weather. Present prices 75s. to 100s. John Bath, Wellington Street, Covent Garden.

SEEDS.

LONDON: July 28.—Messrs. John Sear & Sons, Seed Merchants, of Great Malton, Borough, London, S.E., write that to-day's seed market was barely attended, but few transactions passing. Trifolium continues cheap and abundant. Moderate prices are asked for New Trefoil. Sowing White Mustard is in somewhat improved request. New home-grown Rape-seed and Rye are now offering. The trade for bird-seed is dull and unchanged. Haricot Beans keep steady. As regards Wisconsin green boiling Peas, cables from America report a substantial advance in values. Linseed is firm.

FRUIT AND VEGETABLES.

GLASGOW: July 28.—The following are the averages of the prices current here during the past week:—Apples, 6d. per pound; Tomatos, Guernsey, 6d. to 8d. do.; do. Scotch, 10d. do.; Grapes, home, 2s. to 3s. do. Vegetables: Turnips, French, white, 1s. to 1s. 3d. per bunch; do., white, 4s. to 6s. per dozen bunches; do., French, 9d. to 10d. per bunch; Carrots, French, new, 10d. to 1s. per bunch; do., Dutch, 1s. to 1s. 6d. per dozen bunches; Cabbages, Scotch, 9d. to 1s. per dozen; do., Dublin, 9d. to 1s. 3d. per dozen; Cauliflowers, Dublin, 3s. to 3s. 6d. do.; Herbs, assorted, 1d. to 2d. per bunch; Mint, green, 6d. per bunch; Onions, Globe, 7s. per cwt.; Potatoes, best, 6d. per stone; Carrots, 2s. 9d. to 3s. per stone; Peas, French, 1s. 6d. to 1s. 9d. per basket; Asparagus, French, 1s. 6d. to 1s. 9d. per bunch; do., English, 2s. to 2s. 6d. do.; Cucumbers, 4s. to 5s. per dozen; Lettuce, round, 9d. do.; do., Cos, 9d. to 1s. do.; Radishes, 4d. to 9d. per dozen bunches; Horseradish, 2s. 3d. to 2s. 6d. per bunch; Mushrooms, 1s. per lb.; Beetroot, 7d. to 9d. per dozen; Spinach, 2s. per stone; Rhubarb, 1s. 6d. to 2s. per cwt.

LIVERPOOL: July 28.—Average of the prices at undernoted markets:—North H-y: Potatoes, Early Regent, 2s. 9d. to 3s. 4d. per cwt.; do. kidneys, 4s. to 5s. 6d. do.; Turnips, 4d. to 6d. per dozen bunches; Swedes, 2s. to 2s. 6d. per cwt.; Carrots, 6d. to 7d. per dozen bunches; Onions, foreign, 6s. 6d. to 7s. 6d. per cwt.; Parsley, 4d. per dozen bunches; Lettuces, 4d. to 6d. per dozen; Cucumbers, 1s. 6d. to 1s. 9d.; Cauliflowers, 8d. to 1s. 6d. per dozen; Cabbages, 6d. to 1s. 4d. do.; Peas, 1s. 9d. to 2s. per bushel; Beans, 1s. to 1s. 3d. do. St. John's: Potatoes, 10d. to 1s. per peck; Peas, 10d. to 1s. per peck; Cucumbers, 3d. to 6d. each; Apricots, 1s. per dozen; Gooseberries, 8d. to 4d. per lb.; Currants,

red, 6d. per lb.; Currants, black, 6d. to 8d. do.; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pines, English, 6s. to 8s. each; do., foreign, 1s. each; Cherries, 6d. to 8d. per lb.; Mushrooms, 1s. to 1s. 6d. do.; Birkenhead: Potatoes, 1s. 4d. to 1s. 6d. per peck; Peas, 6d. to 1s. 4d. do.; Cucumbers, 2d. to 4d. each; Gooseberries, 3d. to 4d. lb.; Currants, red, 4d. to 6d. do.; do., black, 3d. do.; Grapes, foreign, 4d. to 8d. do.; Cherries, 6d. to 8d. do.; Mushrooms, 1s. to 1s. 4d. do.

NOTICES TO CORRESPONDENTS.

* * * Owing to the pressure on our space, several reports of important shows, and other matter, are held over till next week.

ANTIRRHINUMS: J. P., Great Warley. The plants are attacked by a fungus called *Uvularia destructiva*. Spray with solution of potassic-sulphide. 1 oz. to 3 gallons of water. G. M.

ASTER: R. V. & Son. The soil is teeming with the mycelium of some fungus, which has attacked and destroyed the roots of the Asters. The manure applied has probably favoured the development of the fungus. Lime would check its progress, if not detrimental in other respects. G. M.

BACK WALL OF A VINEY: C. E. S. Early Tea and other Roses might do if the shade is not too dense in the spring. Camellias would succeed; and these being plants not much affected by insects, are the best for the purpose. *Lygodium scandens* and *Selaginellas* are also suitable.

CARNATIONS: J. F. We found various insects, mites, &c., in the soil, but we cannot tell definitely which, if any, are the culprits. The leaves have the appearance of being attacked by eel-worm, but it will take some time to examine them. Your compost has apparently not been carefully prepared.

CELOSIAS, BEGONIAS, GLOXINIAS: C. B. There is no cure for the malady when it has developed to the extent seen on the plant sent. It would be prudent to take up and burn every affected plant. Another year try the effect of early dressings with the Bordeaux Mixture; not waiting, however, till the disease has appeared on the plants.

CUCUMBERS: E. F. B. Apply manure as a top-dressing, or liquid. Keep bottom-heat up to 80°, top-heat being allowed to run up to 95° for a few hours in the afternoon after closing the house; do not crop very heavily, or thin bine severely at one operation.

ESCALLONIA MACRANTHA: M. P. The proper time to cut in the hedge is early in August, or as soon as the plant has ceased to blossom. It would then allow time for the production of young shoots that would mature before the winter in your part of the country—Devonshire—sufficiently to escape being nipped with frost. We should prefer the scissor or the knife to the shears, although if the work be extensive, the latter must needs be employed.

FIGS: F. J. C. L. and H. South. The dropping of the fruit is not caused by fungi or bacteria. See that the soil is not too hard and compact at the root. G. M.

HAZEL-NUT: A. D. Imperfect fertilisation, from some cause. Another year try the effect of placing boughs of the common Hazel with plenty of catkins on them in the Nut bushes at flowering time.

MUSHROOMS: A. S., Norwich. When Mushrooms are affected in the manner that yours were, they are unpleasant eating, but perhaps not injurious; we would not recommend anyone to partake of them—it would be too hazardous.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—C. W. S. *Epidendrum nemorale*.—C. P. 1, *Cattleya Loddigesii*; 2, *Oncidium flexuosum*; 3, *Trichopilia fragrans*; 4, not recognised; send in flower, or give particulars of the plant and its flowers if you have seen them. 5, *Mesembryanthemum*, send flowers; 6, *Stenotaphrum glabrum variegatum*, more commonly known as *S. americanum*.—A. H. *Odontoglossum Lindleyanum*.—M. F. K. *Stanhopea inodora*. Colour and odour are of relatively minor importance in estimating botanical differences.—T. L. B. Yours is a very pretty natural hybrid (*Odontoglossum* of the section known as *O. Coraline*). The varieties of it usually lean more towards *O. Lindleyanum*, the least showy agent in the cross, yours towards *O. crispum*.—*Ireland*, 1, *Lythrum Salicaria*; 2, *Lysimachia fragrans*; 3,

Aster, not recognised; 4, *Epilobium angustifolium* album; 5, *Lysimachia thysiflora*; 6, *Bocconia cordata*.—P. Castle. *Taxodium distichum*.—E. O. J. *Veratrum nigrum*.—A. H. *Aërides odoratum* and *Oncidium carthagenense*.—J. G. The large leaf and flower are of *Impatiens Roylei*; the other we cannot recognise from the scrap sent. Send a fair specimen, and give particulars about the plant.—W. B. 1, *Campanula Portenschlagiana*; 2, *C. isophylla*.—J. P. Oh, that everyone sent as good specimens, and so carefully packed, as you do! 1, *Mackaya bella*; 2, *Lycocystis formosa*; 3, *Athrotaxis laxifolia*.—*Cardboard Box (No Name)*. 1, *Stachys palustris*; 2, *Galium aparine*; 3, *Galium cruciata*; 4, *Galium palustre*; 5, *Galium uliginosum*; 6, *Lotus corniculatus*.—G. A. A mere scrap, apparently *Muhlenbeckia complexa*.—*Lymington*. *Heuchera Richardsoni*.—W. T., *Leicester*. *Stachys palustris*; *Senebiera coronopus*.

PALMS: *Amateur*. It is not possible to dry home-grown leaves in the sun in this country so that they will equal the imported leaves. The leaves should be cut off before the feathers open entirely, or whilst they are slightly stuck together, and will therefore open after drying by giving the leaf a slight shake. Cycads should be fully expanded before drying. If the leaves are to be bleached, they must be exposed to the fumes of sulphur in a close chest whilst quite fresh and green. The leaves must be separated by being laid on laths or string. The other subjects named must first be dried in the shade, and then bleached in the sulphuring-chest, and afterwards dyed of any desired colour. This is, however, a business that few gardeners or others in this country understand perfectly, and we have no confidence in the results of amateur work in this department.

PENTSTEMON SEEDLING: T. T. A very poor strain, and hardly worth cultivating.

SEEDLING OF LATHYRUS LATIFOLIUS: *Lathyrus*. As a variety it is worth preserving.

STEPHANOTIS FLORIBUNDA FRUITING: C. J. L. Not unusual.

TABLE DECORATIVE PLANTS: *Amateur*. Next week we will endeavour to comply with your wish.

TEA ROSES WITH VERY STRONG SHOOTS: M. P. Under ordinary circumstances these strong shoots should produce blossom in the autumn, September, and October; and if they are monopolising most of the energies of the plant, do not stop them, but get them down gradually to a line approaching the horizontal, and let the other rather weaker shoots ascend. Remove entirely all weak and flowerless shoots, leaving no snags. Afford manure-water occasionally.

THISTLE: A. Y. Thank you. A good specimen of fasciation very common in quickly growing plants.

TOMATO: E. H. B. *Peronospora infestans*. Why send such a miserable scrap?

TOMATOS: J. B. *Cladosporium lycopersici* (see *Gardeners' Chronicle*, June 24, 1893). Burn the affected parts.

VALLOTA PURPUREA: W. and S. Colour variations are not very uncommon in this plant. There is a pure white form.

VINES AND GRAPES DISEASED.—J. Shaw. The fungi present on the Vines are not the cause of the disease, at the same time their presence indicates that something is deranged. Examine the roots, and if any tubercles or gouty swellings are present, please send specimens for examination. G. M.

WASP FOR RED SPIDER, &c., ON VINES: W. M. Such a valuable recipe should be made generally known.

WOODLICE: *Subscriber*. Catch them in pots half filled with hay, in the same manner that earwigs are trapped, put plates or tiles on the staging and ground in the houses, elevating these about half an inch from the ground, &c., and clear out the insects that are sure to be found there every day. It is a good practice to pour boiling water into their haunts.

COMMUNICATIONS RECEIVED.—Dr. King, Calcutta.—Dr. Prain.—G. K. W.—F. B. W.—M. D. T. F.—G. A.—R. V. Hilderie Friend.—R. H. P.—R. D.—R. P. B.—A. P.—P. H.—L. C.—J. B.—C. E. S.—A. W.—R. P. B.—R. D.—Fruit Grower.—R. H. P.—W. G. S., Edinburgh.—E. B.—J. B.—W. J. B.—H. M.—E. M.—C. E. S.—A. P.—F. K.—U. & H.—J. A. W.—H. D'O.—J. Veitch & Sons.—B. S. W. & Son.—F. M.—R. B.—J. H. A.—W. B. Troup.—R. C.—J. W.—J. P. L.—J. V.—J. Moya.—J. W.—J. Grieve & Sons.



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 7, 1897.

THE DISEASES OF PLANTS.

(Continued from p. 81.)

PREVENTION OF FUNGUS DISEASES.

THE great aim of all prevention is to cultivate so that fungus-parasites are unable to maintain a foothold. It is achieved either by avoiding conditions which are favourable to the growth of the pest, or by preventing the crop from becoming predisposed to fungus-attack. Thus, while the practice of growing the same crop over a large area is economical and convenient, it can scarcely be considered healthy, because in the competition amongst the plants for light and air, the strong rise above the weak, which die out, and in dying fall an easy prey to any fungi about. The conditions amongst growing crops are also otherwise favourable for fungus-growth, for there we have generally the abundant moisture and the still air so welcome to all fungi. Then, if any pest does obtain a foothold in our large fields, how rapidly it spreads. The "damping-off" fungus is a familiar pest in seed-pans or beds of seedlings; it is a dangerous fungus only so long as the plants are young and insufficiently protected, and rarely attacks old plants whose outer tissues have become thickened and hardened where the stem enters the soil. If the pans are crowded and growth is forced, this hardening process is delayed, and the seedlings are left longer exposed to damage from the fungus. The treatment for damping-off is air for the seed-pans, room for each seedling to grow, and water in moderate quantity; in other words, to make conditions which will enable the seedlings to grow less in size though more in strength, and which will not encourage the growth of fungi. The same argument applies to flower cultivation, vegetable raising, and young forests; it may be expedient for economy and other reasons to crowd plants together, but in so doing greater risk of disease is incurred.

In many a farm, garden, or wood, there are places where the cultivator finds that certain crops will not grow without becoming diseased. It may be some badly-drained hollow in a field where Potato disease flourishes, or from which "finger-and-toe" is never absent; or it may be a particular place where mildews prevail on Roses or vegetables, or it may be some part of a wood where Larch canker abounds. In any case, it is clearly seeking defeat to attempt to grow in such a place plants likely to go bad there; the plants are predisposed to disease by the conditions of the locality.

Cleanliness in its widest sense is an important virtue in a cultivator who wishes to keep his crops healthy. No unhealthy plants or decaying debris should be left about. How often does one find, say in a market-garden, a heap of leaves and roots, removed in dressing plants for use, swept together with weeds and other things to decay and rot. Such a heap is a

splendid nursery for diseases of fungous origin; here the fungologist is sure to find a happy hunting-ground where he will be rewarded with many specimens. Disease nourished in a place like this soon spreads into growing crops. Again, under glass, there are many conditions favourable to the growth of fungi, particularly if forcing is going on; under the stages, behind pipes, on old neglected woodwork, these are the breeding grounds for multitudes of fungi. For garden or house the treatment is the same, to destroy all rubbish by burying deep in the soil, by making into compost with good strong quicklime, by burning, and by washing down all parts of houses or frames with quicklime in water, with sulphate of copper solutions, with very weak carbolic acid, or weak Condy's fluid.

What are exactly the conditions which dispose cultivated plants to disease is not a problem which can be fully discussed in the present paper. It may, however, be stated as a good general rule that few fungi or bacteria are so virulent and fatal as to take hold of and destroy really healthy plants. Either the plants must be weakened, or the fungus strengthened by some course of treatment. There is no doubt that many fungi which are at first nearly harmless, may become deadly enemies of living plants if grown in suitable conditions. As an example of such a case, we may cite the "Botrytis," Lily disease, described some time ago by Prof. Marshall Ward (see *Diseases of Plants*, chap. viii.), and since referred to several times in the *Gardeners' Chronicle*. In a similar way many fungi may be bred to become parasites on plants. The nurseries for fungi of this kind are, no doubt, these very rubbish-heaps, &c., already referred to; hence the urgent necessity for their early and thorough treatment to exterminate all fungous life.

On the other hand, cultivated plants may be so treated as to render them more liable to attack from fungous enemies. Thus, early forcing, like the growing of a crop over a large area, may be profitable from a market point of view, but it is extremely risky for the health of the plants. Forcing in most cases consists in placing the plants under more or less artificial conditions of soil, atmosphere, and light, in order to make them produce foliage, flower, or fruit of a finer quality, or at a different season from the plants grown more naturally. A frequent result of this treatment is to promote tender foliage, succulent growth, and a condition of the plant generally suited to predispose it to fungous or other disease. Tender foliage means, e.g. in Carnations, that the epidermis of the leaves is thin and moist, so that fungus-spores landing there are placed in circumstances which promote their germination and easy penetration into the foliage; add to this the fact already mentioned, that forcing conditions are otherwise favourable to fungus-growth, and we have a general explanation of how forcing predisposes a plant to disease. What has been said of forcing applies more or less to the cultivation of many plants; the treatment necessary to bring about a certain result—fruit, flower, or foliage—renders the plant more susceptible to attacks by fungi, and fits them better to furnish a nursery-ground for disease. We do not, however, condemn or disparage the necessity of forcing, or any particular mode of cultivation—if it pays otherwise, well and good; we only emphasise that there are certain risks and penalties attached to such practices.

It will thus be seen that the prevention of disease lies well within the province of a gar-

dener's every-day work. By care in this way many diseases may be avoided, and the grower may never be called on to actually face an outbreak. We personally lay great weight on the value of prevention of disease, but it is impossible here to go into the various precautions in any detail; fortunately, many of them are part of that general experience gradually acquired by every grower of plants. *William G. Smith, Edinburgh.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

CATTLEYA WARSCEWICZII GIGANTEA.

THE record of this remarkable variety will be doubly interesting, as it will, I believe, give measurements of that which I consider to be the largest flower of any *Cattleya* that has as yet appeared. But it does not rely on its size alone for distinction, for it is remarkable in form and richness of colouring. The flowers are of fine substance, and flatly displayed. The sepals are broad, and nearly as long as the petals, which are each over 5½ inches long, and 3½ inches wide. The flower, which supports its heavy petals horizontally, therefore measures 11 inches in width. The sepals and petals are light purplish-rose; the very broad labellum crimson-purple, with the usual yellow blotches, one each side of the middle portion. It is the largest of a lot remarkable for their size and beauty in the collection of Joseph Broome, Esq., Sunny Hill, Llandudno. *James O'Brien.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM ×.

Messrs. B. S. WILLIAMS & SON send us an extraordinary bloom of *Cypripedium* with two lips; but that is not the whole change, though it is the one that is most conspicuous. The dorsal sepal or standard is normal, the two lower ones are smaller, separate, and spreading. Inside these comes a whorl of two lateral petals and two perfectly-shaped lips. The column is somewhat twisted, and has a broad saddle-shaped staminode bearing on each side an anther. The stigmatic mass is almost completely divided into three separate lobes, of which one is opposite the dorsal sepal.

"THE ORCHID HYBRIDS"

Mr. George Hansen gives evidence of his enthusiasm and diligence by the preparation and publication of a second supplement to his list of *Orchid Hybrids*. Distance from horticultural centres especially from the Orchid collections of Europe, does not deter him, and in spite of some misprints, he has produced a list which will be so useful as to counterbalance its defects, and ensure its finding a place on the shelves of all orchidists desirous of keeping up to date. It may be had from Mr. Geo. Hansen, Soenic Tract, Berkeley, California.

SCHIZANTHUS RETUSUS AND S. PINNATUS.

THESE two species are among the most beautiful and practically useful of all annuals for indoor culture. Both have lately been very fine in the Cambridge Botanic Garden. The first grows to a height of about 3 feet, and produces large panicles of elegant flowers an inch and a half across, chiefly of a beautiful carmine colour; but ornamented on the upper lobe by a great golden blotch which contrasts very finely with its companion colour. This species is not so often grown as *S. pinnatus*, but it well deserves a note for sowing at the same time, which may be about the middle of August for spring flowering, and later for early summer. Of *S. pinnatus*, a great show of the forms known as papilionaceous is recently over, but a pure white still remains in flower. It is in possible

to describe the variations of colour, but they embrace various shades of lavender and purple, and are beautifully spotted with darker tints, and sometimes with blotches of yellow.

Both species must be adepts in the attraction of insects for securing the advantages of cross-fertilisation; and this one in particular, unlike the other, possesses an admirable mechanism for dusting its visitors with pollen; and early in the day, as a rule, every flower arrived at maturity has dispersed a cloud, sprung by the weight of a tiny insect. It is very simply managed. The lower lobe forms an alighting platform, and folds on each side hold down the filaments in a state of tension until the weight of an insect sets them free. The anther-cells are already open, and, like little boxes, contain a quantity of loose pollen, which is spread in a cloud by the recoil of the filaments. Until this happens, the stamens lie in a central hollow of the lobe, which forms the alighting platform. As an example of a mechanism, interesting to everybody, nothing could be better than this. Some readers may remember the magnificent specimens of this species grown by the late Bruce Findlay, at Manchester, and to them it needs no recommendation as a most ornamental plant for the greenhouse. Culture is exceedingly easy, and the chief point is to bear in mind the great principle in growing annuals of the class—that of having good stocky plants to keep through the dead of winter, when growth cannot be satisfactory, and must be discouraged. The seeds may be raised under glass, but the plants should be grown entirely in the open for so long as the weather permits. They may be sown in 32-sized pots, to be thinned out to five, or seedlings may be pricked out from a seed-pan. Early in October, or before, according to the weather, the pots may be transferred to a shelf near the glass in the greenhouse. The lowest greenhouse temperature is best, in order to keep the plants quiet, and as at all times they are liable to the attacks of mildew (an Erysiphe), water must be carefully given. The plants shift well, and in spring may be transferred to 24-sized pots, in which, for ordinary purposes, they may be allowed to flower. From the nature of the case, the soil used must drain readily, but at the same time it ought to contain a fair proportion of good loam, which conduces to a sound and solid growth. *R. Irwin Lynch.*

KEW NOTES.

No doubt the flower-beds here on each side of the principal walk, and in front of the Palm-house, are most attractive to the general public at this particular season of the year, and to them the gardens owe much of their beauty. It is pleasant to see that the beds do not entirely depend upon bedding Pelargoniums for their beauty, effect, and interest. That beautiful hardy herbaceous perennial *Bocconia cordata* is represented by a good bed; it is an excellent subject for isolated positions on lawns or woodlands, its handsome cordate leaves and feathery spikes of flowers being very effective. A mixture of the always effective *Acer Negundo variegatum*, and *Ferdinanda eminens*, a fine ornamental-foliaged stove perennial, makes a light and graceful arrangement. Good use is made of *Salvia patens*, the plants producing a striking effect as seen in a mass. An attractive bed is made up of the purple-flowered *Chnicus diacanthus*, *Iresine Wallisii*, and the bright Pelargonium *Vesuvius*, the whole edged with a *Viola* aptly named *Snowflake*. A bed of *Verbena Ellen Willmott*, a light rose-coloured flower, is blooming very freely, and as seen in a mass, produces a telling effect.

Alyssum maritimum variegatum forms a good edging to *Heliotrope Miss Nightingale*, light, one of the best; and *Calceolaria amplexicaulis*, *Gaura Lindheimeri*, with its free and gracefully arching spikes of white and red flowers, make a happy combination, associated with Pelargonium *Henri Jacoby*, *Lobelia fulgens*, and *Calceolaria amplexicaulis*, edged with *Tropeolum Vesuvius*, make a good bed. *Canna Paul Bert*, with dark foliage, shaded chocolate

and purple, and circular-formed flowers of a glowing amber shade, is very distinct and dwarf, and is in a groundwork of the old *Fuchsia globosa*, one of the best of the hardy kinds. The old *Verbena venosa* and Pelargonium *Daybreak*, edged with *Viola Arobie Grant*, make a pretty mixture. Roses planted out in beds have, of late years, been well cared for at Kew, and this season is no exception to the rule, although the continued hot weather has militated against their general success; still, they have been much admired, compelling the admiration of the King of Siam and his suite on a recent visit, for, as one of their number observed, they saw nothing like it in Siam, although Roses grow there. How charming is a bed of the Polyantha and a single group (*Rosa polyantha hybrida*). Especially noteworthy is *Little Dot*, white, with pale salmon-pink centre; *George Pernet*, pale rose, very dwarf and compact; *Red Pet*, dark crimson; *Perle d'Or*, nankeen-yellow, with orange centre, yellow; *George Pernet*, rose, changing to peach, with yellow shading, most free and continuous bloomer, a charming flower; *Gloire des Polyantha*, an almost perfectly formed flower is very charming. *J. B.*

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 63 to 69.)

0, SCOTLAND, N.

CAITHNESS.—The early-flowering Apples, Cherries, and Strawberries, suffered very much from the cold north winds which prevailed in this part when the trees and plants were in bloom, with the result that these fruits were almost a complete failure. The later-flowering kinds and varieties promise good crops. *W. F. McKennie, Thurso Castle Gardens, Thurso, N.B.*

— I find that the cold and wet sunless season we experienced in this part of the country last year has been against the trees bearing even an average crop, and small fruits are especially poor. The Apple crop on trees on south and west walls I have not seen so good for the last twenty years, but crops of all kinds are a fortnight later than last year. *W. Mackie, Dunbeath Castle Gardens.*

MORAYSHIRE.—With the badly-ripened wood of last autumn, and an exceptionally cold spring, our fruit-crop this year is a very thin one. Apples and small fruits are the only ones which have an average crop, and of these Lord Suffield, and all the Codlins are heavily cropped. Pears and Plums, although they seemed to set and swell their fruit for a time, have dropped to such a large extent, that scarcely a fruit is left on some of the trees, Denyer's Victoria Plum being an exception, there being a nice crop on most of those trees both on walls and standards. Apricots, Peaches, and Cherries are the worst crop that I have seen for years. The week of hard frost in April seemed to paralyse all growth, and what fruits were not killed at that time have dropped since. The Peaches have also been blistered to such an extent that some trees are completely spoiled. *Ohas. Webster, Gordon Castle Gardens, Fochabers.*

NAIRNSHIRE.—Our fruit crops of all kinds looked very well in the beginning of the season, but they suffered very much through the severe frost in the middle of June, when on two successive mornings the thermometer registered 6° and 7° respectively; but Kilravock suffered rather more than neighbouring gardens—still, on the whole, I think my report is pretty near the general condition of the district. Crops of all kinds are about six weeks later this season. *Alexander Ross, Kilravock Castle Gardens.*

SUTHERLANDSHIRE.—The worst crop for many years. *D. Melville, Dunrobin Castle Gardens.*

1, SCOTLAND, E

ABERDEENSHIRE.—The Apple crop is very irregular, some trees having a large crop, whilst others have a few; blossom was abundant. Pears blossomed freely, but the blooms set badly, and the crop is a thin one. Plums, such free-setting varieties as *Victoria*, have good crops, and other varieties are fair.

Cherries, although bloom was plentiful, are a very poor crop. Strawberries, Gooseberries, Raspberries, and black and red Currants are above the average. Lack of sunshine, and the cold east winds prevailing when the fruit-trees were in blossom, account for irregular setting. *John Forrest, The Gardens, Haddo House, Aberdeen.*

BANFFSHIRE.—Peaches, Nectarines, and Apricots are a total failure, although early appearances were in favour of a good crop, but our hopes were blighted by the cold winds. Fig-trees on the open walls are as usual promising well; Pears are about half a crop; Apples on standard trees and on espaliers are under the average, although they had a great show of blossom. Small fruits, as a rule, are all good, especially Gooseberries and Strawberries, but three weeks later than usual. *J. Fraser Smith, Cullen Gardens.*

BERWICKSHIRE.—The Apple crop, notwithstanding the abundant bloom, is the poorest that we have had for several years, the long spell of cold, sunless weather we had at blooming-time and afterwards doing the mischief. Some varieties, viz., *Kewick Codlin*, *Lord Grosvenor*, *Winter Hawthornden*, *Stirling Castle*, have a fair crop. Pears have set well, and there is promise of a good crop. *Doyenné du Comice* is our finest Pear for walls here. Plums, *Denyer's Victoria* for example, are a very poor crop. Small fruits generally are good, but Strawberries are not "sweetening" well. It is, on the whole, the weakest season, so far, that we have had for many years. *John Cairns, The Hirsell Gardens, Coldstream, N.B.*

— In the month of February, 1897, fruit-trees and bushes in this district never gave better promise of an abundant crop of fruit, but such havoc was wrought by bullfinches from that date onwards to the respective flowering seasons, that the crop is only an average one; and here the Apple crop is almost a failure—the few buds left by the birds were still further reduced when in flower by 6° of frost on June 7 and 9. Strawberries were also completely ruined by this late frost. *Victoria Plums* are a very heavy crop; all other sorts were so damaged, that in general the crop is only an average one. Gooseberries are in a similar condition. In some parts of the garden they are very heavy crops, in other parts nothing. *James Ironside, Blackadder Gardens, Edrom.*

EAST LoTHIAN.—What was feared would prove an exceptionally bad fruit year is turning out, with the exception of Apricots, and perhaps Peaches, a good average one; it is, however, characterised by remarkable lateness, and therefore it is impossible to indicate with any degree of certainty the general quality of the various fruit. Growth is remarkably healthy, and foliage well developed. *R. P. Brotherton, Tynninghame, Prestonkirk.*

FIFESHIRE.—There is no kind of fruit in our district that is over an average crop this year. With the exception of Codlin varieties of the Apple, the crop is very light, and some of the finer varieties, such as *Cox's Orange* and *Blenheim Pippin*, are almost fruitless. The trees are healthy, however, and comparatively free from caterpillar; while the Plum is badly attacked with green-fly, the result in some degree being due to the absence of wasps. Peaches suffered much from blister and frost, as well as the Apricot when in flower. Early Cherries are good, while late and Morellos are a poor crop. The scarcity of fruit may be attributed to the wet, sunless autumn, combined with the heavy crop of last year—giving another object-lesson in favour of thinning to secure a yearly moderate crop of good fruit. *W. Williamson, Turril.*

FORFAR.—The fruit crops in this quarter are very much later than usual, the first-gathered Strawberries being three weeks later than last season; and owing to the cold and wet weather, mildew on the berries is prevalent. Pears are a fine crop, but stand very much in need of fine warm weather to swell the fruits to the usual size. The same may be said of the Apple and Plum crops. *W. Alison, Scavien, Monifieth.*

KINGDOMSHIRE.—Of Apples, there are none here, and the crops of this fruit are under in this neighbourhood. This is a very different state of things to last year, when in the gardens here the crop of Apples was enormous. Apples and Pears on walls have an average crop. *J. M. Gairns, Arbutnot, Fordoun.*

— Apples and Plums are the worst crops hereabouts, as after bearing a big crop last year the trees bore but few flowers, which seemed to set; but the cold nights and east winds caused many of those to drop. Apples are the better of the two, but still being under an average crop. *Wm. Knight, The Faque Gardens.*

MIDLOTHIAN.—The autumn of 1896 being cold, wet, and raw, fruit trees did not ripen: their young wood under favourable conditions; and although there was a great abundance of flower-bud formed

Duchess of Oldenburg, Worcester Pearmain, Tower of Glamis, Stirling Castle, Golden Noble, Blenheim, King of the Pippins, Prince Albert, Frogmore Prolific, Golden Spire, Grenadier, and the like free bearers. Plums and Cherries are also fine, but the crop of the latter is generally thin. Peaches and Nectarines are a better crop on the open walls than they have been for years. Apricots were thinned by severe frost when in flower; but there is a light crop of very fine fruit. Currants and Gooseberries were injured by frost, but in sheltered places the crop is good. Strawberries are a great crop but extra late, John Ruakin being five weeks later than last year, and our earliest both seasons. Royal Sovereign did not do well in the cold, damp weather, but is now pulling itself up with the heat. Superlative still holds the lead among Raspberries, and looks like maintaining it for many years to come. *Malcolm Dunn, The Gardens, Dalkeith, Midlothian.*

weather experienced since the trees were in flower; some varieties of Apples failed to set, while others have good crops. Cherries dropped wholesale at the stoning period, and the Gage Plums are not good crops; while all the small fruits are plentiful and good. *Wm. Wright, Taymouth Castle Gardens.*

SILKESSHIRE.—The crops of Apples and Pears here are very poor, just a fruit here and there; Plums are a failure, excepting Victoria. Cherries, Apricots, and Peaches are a thin crop; Strawberries are a heavy crop, but owing to a cold sunless June the half of the fruit did not swell; the same holds good of Raspberries. *O. Turner, Sunderland Hall Gardens, Selkirk.*

6. SCOTLAND, W.

AYRSHIRE.—The promise of the great crop in early spring was much spoiled by the severe frost that occurred in the month of April, and fruits of Peaches and Apricots have almost disappeared. Apples will, I believe, be a good crop if we get genial weather in the autumn. The fruit-trees are clean, and growing finely, owing to much rain having fallen. Small fruits got a severe check with frost when in flower, Black Currants being much smitten. *A. Wilson, Auchincruive, Ayr.*

DUMFRIESSHIRE.—I never saw fruit trees with finer promise of a crop of fruit in the spring, but the long spell of cold, wet weather, and the abundance of caterpillars, completely spoiled them; the only Plum we have with a fair crop upon it is Denyer's Victoria. Early Cherries are a very poor crop, but Morellos set better. Of small fruit, black Currants are the only kind which has a fair crop. *George McKay, Balloch Castle Gardens.*

DUMFRIESSHIRE.—Neither for quantity nor quality will the fruit crops in this district break the record of previous years. With the exception of Strawberries and Raspberries, the yield is much under the average, while the quality and finish of the fruits now ripening is deficient. The fine summer weather will no doubt improve matters very much; but still, as a whole, the fruit crops in this district are disappointing this year. In nearly all cases there was a splendid show of blossom, but the extreme fluctuations of temperature, excessive amount of rain, and the very late frosts, with occasional strong gales of wind, caused great damage when fruit trees were in flower. With us, Strawberries and Raspberries are the only crops that are over the average, and of which the quality is good. Cherries, Pears, Peaches, and Apricots are a very thin crop indeed, and it is only on some of the well-known, free-fruited varieties of Apples and Plums that anything like a remunerative crop can be looked for. There is, however, a great demand for home-grown fruit of all kinds in the south-west of Scotland, and market-growers are getting excellent prices for fruit of good quality. *J. Mackinnon, Terregles Gardens.*

— Apples, Pears, and Plums, are very much under the average crop here. The heavy rains in June saved the crop of Strawberries. Late spring frosts are very prevalent here, which often prove disastrous to all kinds of outdoor fruits. *David Inglis, Drumlanrig, N.B.*

STIRLINGSHIRE.—The weather in the spring months was unusually cold and wet, with a low night temperature which often went below the freezing-point. Fruit-trees of all kinds had abundant and strong blossom, which, for the reason stated, failed to set well. *A. Crosbie, Buchanan Castle Gardens.*

— The continuous cold rain had a bad effect upon the bloom of Cherries, Plums, and Apricots, and the prevailing temperature very changeable. The temperature at night has been exceptionally low all the season, the thermometer often during the earlier part of July standing at 35° to 40° in the early morning hours. I cannot overrate the importance of making selections of fruit, when planting is done, suitable to soil and climate. *M. Temple, Carron, Falkirk.*

WIGTONSHIRE.—Hard frosts in May, and heavy storms in June, have seriously damaged the fruit



FIG. 23.—*EPILAZIA* × *RADICO-PURPUREATA* (*EPIDENDRUM RADICANS* ♂, *LÆLIA PURPUREATA* ♀).

Sepals and petals light orange-scarlet; lip yellow in the centre, banded with light purple.

(Raised by Messrs. J. Veitch & Sons, of Chelsea. See *Gardeners' Chronicle*, July 31, 1897, p. 61.)

on nearly all kinds of fruit, they proved to be weakly in the spring, and after making a great show when in blossom, the most of them dropped off, except in the most favoured places. Here, on a free warm soil and well sheltered, fruit on the whole has done well, although the spring was cold and late, and up to the first week in July, the season was quite three weeks behind the average. The fine warm weather of the last fortnight has done an immense deal of good to all garden crops, and the fruit is swelling to a fine size under the genial sunshine. Trees are very healthy, and the cool season, till recently, has kept insect pests in subjection. Pears are the crop of the season among fruit; nearly every popular variety bearing a fine crop of handsome fruit. Apples are not so heavy a crop as the Pears, but they are equally large and fine. All the Codlin tribe are bearing profusely, and so are such popular Apples as Ecklinville, Warner's King,

— Apples bloomed late, and seem mostly carrying a full crop. Pears, Plums, and Cherries bloomed freely, but the bulk of the crops dropped in the setting. Few Gages or other Plums are grown around Edinburgh; Peaches and Nectarines not largely grown, but in warm, sheltered gardens fair crops of them are found. Apricots are scarce; Gooseberries generally thin; red and white Currants and Raspberries a fair crop; Strawberries a month later than last year, good crops, but small as compared with southern supplies. *D. T. Fish, 12, Fettes Row, Edinburgh.*

PERTSHIRE.—With the exception of Peaches and Apricots, the fruit crops in this district are, on the whole, good, but everything is about a month later than usual. *A. McKinnon, Scone Palace Gardens.*

— The fruit prospect this season has never been very promising, owing to the ungenial

crops in this locality. *John Bryden, Dunragit Gardens.*

--- The crops in this part, with the exception of bush-fruits, Strawberries, and Figs, are all very much below the average, Pears and Plums being the worst. Apples are fairly good on early varieties, as the Codlins, Ecklinville Seedling, Warner's King, and some of the Pippins; but many trees of later varieties are fruitless. Figs growing against walls are heavily cropped, and promise to finish up fine fruit. *James Day, Galloway House, Garliestown.*

2. ENGLAND, N.E.

DURHAM.—The fruit crops here, I regret to say, are very poor. The enormous crops of fruit of all kinds that we had last year have had something to do in lessening the crops this year, and the long-continued sunless weather and cold frosts in the early months prevented the blossoms from maturing. Currants, Gooseberries, and Strawberries are the only fruit that can be called a fair good average. *J. Noble, Woodburn Gardens, Darlington.*

--- Small fruits are scarce owing to the cold weather that prevailed during the time when the bushes were in blossom, then afterwards we had very unsettled weather with fogs from the sea, which caused the fruit to fall; but the fruit trees we do not prune have a fine crop, the foliage having protected the fruits against the cold. This is the worst year for fruit that I have experienced here for forty-two years, and now we have a spell of dry, hot weather which is fatal for ripening the Strawberries and other fruit to perfection. *R. Draper, Seaham Hall.*

NORTHUMBERLAND.—Very few Peaches, Nectarines, and Apricots are grown out-of-doors in this cold upland district, and on the few trees met with there was abundance of bloom, but the long-continued, cold, ungenial spring destroyed it. Apples had abundant bloom, but it was weak, hence easily starved with low temperature. It is almost too soon to speak of the quality of the out-of-doors fruit here, we are so late. *Joseph Oliver, Felington Park Gardens, Whittingham.*

--- From the middle of August last year onward, we had much rain, and but little sun to ripen the wood of the fruit trees; and from March to the end of June this year we had exceptional high, cold winds. The blossoms on Peach and Apricot-trees, and on the Plums growing on North walls, have been very weak; still, some of the trees are over-cropped, but the greater number have but few fruits. Strawberries were injured by late frosts and cold winds, and the fruits are not swelling off well. Apple-trees are splendidly cropped. *George Harris, Castle Gardens, Alnwick.*

YORKSHIRE.—Standards and bushes of Pears have an average crop, but the trees on walls a fairly good crop. Among Apples, Lane's Prince Albert, Domino, Keswick Codlin, and Lord Suffield, are the only varieties having an average crop. Plums are a complete failure. Peaches and Nectarines out-of-doors are carrying very few fruit. Gooseberries and Currants are thin on the bushes, and the fruit small. Raspberries a good crop. Strawberries few and small. Nuts are a failure. *J. Riddell, Castle Howard Gardens.*

--- The Apple trees had plenty of blossom, but this did not set well, a great many falling off, owing, I think, to the drought. Pears showed but few blossoms, and these set badly. The Plums showed very few blossoms. The fruits of the sweet Cherries were cracked badly; and those of the Morellos mostly turned of a yellow colour and fell off—the trees themselves are healthy. Peaches and Nectarines are good outside, as are Apricots, but are dropping off the trees. The Strawberry crop was a heavy one, and the fruit large, the finest being President. The Gooseberry crop suffered from the depredation of birds taking the buds in winter. *John McClelland, Ribston Hall Gardens, Wetherby.*

--- The present season is the worst we have had for a long time, the result in part of the heavy crops of last season, a wet autumn, which pre-

vented the thorough ripening of the wood, and the cold sunless weather during April last and May. The fruits on young plantations of Royal Sovereign Strawberry are excellent as regards size, weight of crop, and quality; Black Prince, Noble, and President also very good. *Bailey Wadda, Birdsall, York.*

--- Fruit crops suffered from the sharp frosts in the spring, especially Currants and Apricots. There was an abundant show of blossom, but only Apples and Strawberries hereabouts are an average crop. *Geo. Batley, Wentworth Castle Gardens.*

--- All hardy fruits blossomed well, but the continued cold east winds and keen frosts during May and June not only killed the blossom, but caused the majority of the fruits to fall off after being set. It seemed remarkable, but the early leafage put forth by Currants and Gooseberries saved the crop, which in our case proved to be very good. Strawberries suffered later from the drought as well as from the effects of cold weather. *J. P. Leadbetter, Tranby Croft Gardens.*

--- In this district, in the spring, there was a great wealth of bloom on all fruit trees, and a rosy prospect of good crops of fruit; but the continual cold from the north-east paralysed the energies of the trees. The protracted spells of cold, I find, are far more injurious to a full crop of fruit than those cold snaps we are familiar with during the latter half of May. Nevertheless, we have a heavy crop of Codlin Apples, and some few other varieties, notably that grand Apple, Lane's Prince Albert, Cellini, Ribston, Cox's Pomona, Cox's Orange, and Warner's King. Of Pears, the Jargonelle is a good crop generally. Plums are a total failure. *John Easter, Nostell Priory Gardens.*

--- Apples as a whole are a moderate crop, Keswick Codlin, Mère de Mönage, Potts' Seedling, Stirling Castle, Sturmer Pippin, and Warner's King being the best cropped. Of Pears, Louise Bonne of Jersey, Marie Louise, and Souvenir du Congrès are the best. I have not seen a Plum tree upon which there is a good crop in this neighbourhood, and in this garden we have scarcely any. Of Strawberries we had a good prospect in the early spring, but the sharp frosts and cutting winds in May were most disastrous; then the storm of June 16 completed the wreck. It is, as a whole, the worst season I have ever experienced. *Thos. Bonsall, Elmet Hall Gardens, Leeds.*

--- This is the worst fruit season we have had in this district for the last six years. Of Apples, Irish Peach, Lord Suffield, Prince Albert, and Glamys Castle have an average crop; a few other varieties have a sprinkling, while many varieties have not a fruit upon them. Pears, too, are very thin, a few trees in the most sheltered places having about half a crop, and this after one of the most splendid promises I ever saw; but the blossoms were battered to pieces by the terrible winds that blew the whole time the trees were in bloom. In Plums, Victoria is the only one with an average crop. Sweet Cherries are a failure, and Morellos half a crop; Apricots are very light, Strawberries plentiful, but the fruit is small. *J. Hughes, Wentworth Woodhouse Gardens.*

(To be continued.)

THE ROSARY.

ROSE PEST.

We have lately had brought under our notice, in a way more striking than agreeable, the ravages of a mould which Mr. Massee has kindly identified for us as *Actinonema Rosa*. It occurs in the form of long, brown blotches on the upper surface of the leaves, the blotches being irregularly oblong along the midrib, but elsewhere nearly circular. Furthermore it attacks the young shoots, and causes them to blacken and die back to the old wood. After a few days the leaves fall off, and the bush is stripped, leaving only the skeleton and the blasted twigs. The disease is rapidly contagious, one bush having been first affected, from which the fungus has spread to other bush and

standard Roses in the same bed. We have followed Mr. Massee's advice to collect and burn the diseased leaves, but fear that this will only prove a partial remedy. In addition in the hope of preventing the spread of the disease, we have freely applied Barr's Bordeaux powder to the neighbouring Roses.

ROSES, H.P.'s AND TEAS.

For appearance sake, and for the production of some late flowers, Rose-bushes, &c. should be examined, and have all the faded blooms and weak shoots removed; and in the case of vigorous plants some slight amount of pruning should be done. On hot dry soils, and where the rainfall has been slight, the bushes, standards, and wall-plants will be greatly benefited by an occasional soaking of manure-water, or failing that, of clean water. In most deep loams Roses will bear a good deal of drought without injury or check; but it is quite otherwise on light shallow soils, and much care is required in order to keep the plants in vigour. I should like to make mention of a few good Tea Roses whose buds are usually plentiful and strong, viz., *Perle des Jardins*, *Adelina*, *Vivian Morel*, *Gustave Regia*, *Claire Jacquier*, *l'Idéale*, *Caroline Testout*, *W. A. Richardson*, *Edith Gifford*, and *Celine Forestier*. *H. Markham, Margate.*

METHODS OF PROPAGATION.

(Continued from vol. xxi., p. 316.)

VINES FROM EYES.—In addition to the classified methods of raising plants in nurseries, already treated upon in these articles, there are other processes that cannot well be scheduled. Single-eye, or bud-propagation, is the recognised method for the Vine and other kindred subjects, and it is wonderful what results may be obtained in this way. Not many years ago, Vines for all purposes were increased by layering; but now, probably, Vine-stocks are as few and far between in nurseries as the Great Auk is among birds. This being effected in the open air, the canes when rooted were only partially ripe, and consequently, fit only for "planters," but now few gardeners will accept such Vines for any purpose, but prefer those raised from single eyes or buds. I propose now to give the process as successfully practised by myself and others.

Those who have vineries under their charge, will have no difficulty in selecting some well-ripened wood, carrying good promising buds, when they prune back their Vines in late autumn or winter. The shoot must have a distinct label put to it, and be laid in by the heels in a cold vinery, or other place free from frost.

If there is plenty of heat at command, commence propagation in January; but if not, defer starting till the end of February. Prepare some fairly rich soil, and as many as required of clean 60-size pots. Put a single crock at the bottom of each, and fill loosely with the prepared soil. Taking a piece of the reserved Vine-wood in hand, hold it firmly above the bud, in the left hand, and then cut diagonally through the Vine, so as to make a pointed piece of wood, about 2 inches long, carrying a single bud, and finish off by cutting straight through the piece, just above the bud. The large broad buds had better not be selected, as they often conceal an embryo bunch of flowers, which, if allowed to develop, will hinder vigorous growth. Prepare as many eyes as you require, and taking one of the prepared pots of soil, dibble a small hole at the side, and introduce one of the finished Vine eyes into the hole in such a position that the bark is next the inside of the pot, and the cut face of the eye is pressed against the soil, add a little more soil, and press all very firmly. Be careful to label the varieties, thoroughly soak them with tepid water, and then plunge into an inside pit in either tan or cocoa-refuse where there is a regular but gentle bottom-heat. Keep quite close for a week, and when giving water or air, just look over the batch and see that none is dry or has developed fungus-growth at the cut part, this being easily avoided by covering the surface of the soil and eye with sterilised silver

sand. In about three weeks the eyes will be well-rooted, and may be given their first shift into large 48's, but this and all re-potting should be done in the warm propagating pit, and the soil used be also warmed, as at this period of growth the young Vines are most sensitive to changes of temperature, and a chill will not only retard progress, but may spoil them for some time. Upon steady but unchecked growth depends the ultimate success of this process. The young Vines will make quick progress, and the temperature of the Vinery may be allowed to rise to 90° or 100° in the daytime, and should not be less than 75° at night. As soon as the roots show freely upon turning the plant out of its pot, the Vines may be given their final shift, for though others prefer to shift twice after this, I think it unnecessary. Prepare some fresh loam and well-decayed manure, and add to it one-quarter part its bulk of bone-meal, mix well and then proceed to repot into 10 or 12-inch pots, leaving the surface of the soil about 3 inches below the rim of the pot to allow a mulching of cow-dung to be added on the surface, and when all are

reached, gradually decrease the heat, and give plenty of air, only syringing at night before closing the house. Soon this may be dispensed with, the only water used being applied to the soil. Be cautious not to break or bruise the terminal growth, as this is almost certain to induce lateral growth, and so spoil the rods.

When the wood in the lower joints begins to get nut-brown and firm, afford air night and day, but without draught, and as soon as the lower leaves begin to assume a rich colour, the Vines may be taken out into the open air, and fastened up against a south or south-west wall, to finish off, though some keep them in the house till the foliage begins to fall; and I have heard a grower say he did not mind a little red-spider at this period, forgetting that though at this stage it could do little or no harm, yet eggs will be laid in the minute crevices of the bark, which remaining dormant during the winter will, in the following summer hatch and produce myriads of this minute pest, and so do much harm. Of course, in wet sunless seasons Vines will not properly finish

advantage is that no definite period can be fixed for the cutting of the crop which will be found suitable for all species represented, and we must either cut individual trees as they mature, or strike an average which can only be suitable for two or three species at the most. By adopting the first method we run the risk of letting in strong winds which may make gaps during every winter, while the necessity for waiting until the longest lived trees are ready for the axe involves the non-utilization of a great deal of the ground for many years. By fixing upon a definite period for clearing the ground, a great many trees must either be immature or else overripe, conditions which always reduce the value of the timber. But however strong a case can be made out against mixing trees together for the sake of giving the plantation so-called "variety," nothing can be said against a mixture made with due regard to the habits and requirements of the species which compose it. By a judicious blend of shade bearers and light demanding species, much heavier crops can usually be obtained than when the latter are grown alone, for in such a case the ground is rarely shaded sufficiently well to keep weeds and rubbish from springing up beneath, a condition of things, however, which is not altogether objected to in game covers. But taking the economic *pros* and *cons* of the case first into consideration, pure woods are sometimes found to have certain disadvantages which more than counterbalance the simplicity with which they are managed, and the clean timber they invariably produce. Defoliating insects, which increase enormously during certain seasons, find in woods consisting entirely of their host plant, a veritable Arcadia until a corresponding increase of their own parasite, or the breaking out of disease, again, reduces their number to the normal. Parasitic fungi are also more troublesome in pure woods as a rule, owing to the rapidity with which the disease spreads from tree to tree, and the ground itself may become so infested with the mycelia of certain forms of fungi that great difficulty may be found in raising a young crop of the same or an allied species upon it.

With shade-bearing species which are comparatively safe from the above dangers, there is no necessity for the admixture of other kinds, and such species as Beech or Hornbeam always produce heavier and cleaner crops of timber when grown in pure woods. It follows, therefore, that the mixed plantation may or may not be justified from a sylvicultural point of view, according to the species employed, and their relative importance in the crop being grown. When light-demanding trees constitute the main crop, an admixture of shade-bearers is desirable for cultural reasons. When shade-bearers represent the species employed they are usually better without the presence of light-crowned trees, which allow light to penetrate the leaf canopy, and induce the growth of side-branches which produce rough timber.

Neither from the aesthetic nor from the economic standpoint, therefore, can any hard-and-fast rule be laid down for planting woods which are intended to combine the ornamental and useful. The method which probably comes nearest to accomplishing these objects, however, is that of grouping the selected species upon the various soils and situations best adapted to their growth. There is nothing new about this method, of course, and it is one very commonly adopted in the formation of large woods. But the amount of success attending it depends almost entirely upon the skilful manner in which this grouping is carried out. A succession of groups can become equally monotonous and tiring as the uniform mixing of species by individual trees, and abrupt changes in the cropping and type of wood without any apparent reason are as unnatural as the existence of fifteen or twenty different species upon an acre ground. A. C. Forbes.

(To be continued.)

STREPTOCARPUS AT OTE HALL.

THESE handsome early summer-flowering plants are being improved so much in the colouring and size of their flowers, that they are, in time, likely to rival the favourite Gloxinia; and in the estimation



FIG. 24.—A GROUP OF STREPTOCARPUS VARIETIES, AT OTE HALL, BURGESS HILL, SUSSEX.

potted, stake and tie loosely. They may be now permanently staged in a warm vinery, allowing the pots to touch each other so as to make the best use of the space. The best form of stage is built of large slates laid upon brick piers, covered 6 inches or more deep, with partially fermented horse-manure. This will exhale ammonia in small quantities when moist and warm, and on this the growing Vines feed by means of their leaves. Still continue to water with tepid water, to which later on may be added to a three-gallon water-can a handful of Thomson's or Clay's artificial manure. One may now expect a strong, healthy, rapid growth. Be very careful not to allow any of the foliage to scorch; syringe freely in the morning over the foliage, again at noon over the pots and stage, and finally, at night, before closing up, over all. I do not advise any shading, as this fosters the production of long-jointed shoots not approved of by Grape growers.

The insect enemies are the usual pests of the stove and greenhouse, and the worst perhaps is the so-called "red-spider," but there is little danger of an attack of any kind if healthy growth be maintained.

Very soon the canes will thicken and attain to the maximum growth of 6 or 8 to 10 feet. When this is

in the open; but this can safely be left to the intelligence of the grower. It is advisable to put a slate or tile under the bottom of each pot, to prevent earth-worms entering the soil from the bottom, and so souring it. You will now possess a batch of pot-Vines which may be used to fill up vacancies in the vinery, to force for early fruit, and to inarch on Vines which you may have already established, but which are not the sorts you desire. *Experience.*

(To be continued.)

FORESTRY.

MIXED PLANTATIONS.

(Continued from vol. xxi., p. 295.)

THE economic results from an ordinary mixed wood are usually almost as unsatisfactory as its ornamental aspect. Indiscriminate mixtures invariably produce too great a proportion of coarse timber to prove economical on a large scale, for that close canopy of foliage so essential to the proper cleaning of the stems cannot be maintained for any length of time when trees of different habits and rates of growth are mixed up together. Another dis-

of some to excel them in beauty, as they now do in the ease with which they may be raised and grown.

Our illustration (fig. 24, p. 85) shows three well-grown and abundantly flowered examples produced by Mr. C. Jones, sr. to H. Woods, Esq., Ote Hall, Burgess Hill, Sussex. These plants were four years old, and measured 3½ feet across. They were in 10-inch pots, and at their best at the end of the month of June last, and then possessed 150 more flowers than at the time the photograph was taken.

COLONIAL NOTES.

DIPTERACANTHUS SUBRINGENS, Nees.

THIS semi-climbing plant is most conspicuous when flowering. In the Botanic Garden, Grenada, it has been producing its large bright red flowers for many months past. It seems to thrive best under the shade of trees, and bearing this in mind at the time of planting it, we gave it a position against the trunk of a *Brownea coccinea* tree, planting it at its base. The shade given by this tree is fairly dense. The leaves of this semi-climber have prominent mesh-like vein markings underneath. It is a native of Brazil. (Kew).

CENCHRUS TRIBULOIDES, L., AND C. ECHINATUS, L.

The dissemination of seeds and fruit over various parts of the world is an interesting study; the influence in this respect the currents of the sea alone have, not to mention the modes of transference by animal agency, is truly wonderful. But what I wish to refer to at the present moment is the exceedingly uncomfortable position one is placed in when the burrs of these grasses (*Cenchrus*) get attached to the bottoms of one's trousers' legs, and then work upwards, pricking like needles into the soft, fleshy portion of one's legs.

C. echinatus is especially common in the Botanic Garden district, and whilst walking where this plant is growing, people are more likely than not to get into contact with its undesirable burrs, much to their discomfort and annoyance. I can call to mind no plant near at hand that is such a nuisance in this respect.

ARCHONTOPHONIX ALEXANDRE W. & D. (PTYCHOSPERMA ALEXANDRE, F. Müell.).

Owing to the effect produced by its flowers and fruits, this Palm must stand first among those other Palms growing in the Botanic Garden, Grenada. The masses of white flowers, shiny-green, and bright red fruits, are often present on the same trunk at the same time, and it is at such times as this that its full beauty is displayed. A native of Queensland.

DACRYODES HEXANDRA, Grisebach.

In Grenada there are two trees known as Gommier, the above-named is called Mountain Gommier because of its mountain habitat; and the other *Bursera gummifera*, a lowland and seaside tree, is distinguished as the Lowland Gommier. *D. hexandra* is one of the largest mountain trees that exist in the colony, and, as in the woods of the Grand Etang district, they assume in bulk of trunk gigantic proportions. The trunk if incised discharges a fragrant and a very inflammable gum, which is of a sticky and an adhesive nature. This gum is burnt in Roman Catholic churches, and is known as incense or gommier. The timber is cut up, and among other uses, is made into shingles for roofing houses, especially in the mountain districts. Its flowers, like the Nutmeg, are of two sexes, and are borne on distinct trees.

MICHELIA CHAMPACA, L.

We have no representative of the genus *Magnolia* in the Botanic Garden, Grenada, but we had flowering an allied plant in the above-named *Michelia* during the month of May this year. Its inconspicuous yellow flowers are powerfully fragrant, and pleasantly so from a short distance, but hardly agreeable when one is brought into close contact with them. Planted here and there, the air in the vicinity becomes

agreeably pleasant. Our trees now flowering, and also fruiting, are quite young, and are only from 6 to 10 feet high. "The tree is sacred to Vishnu, and is, therefore, an object of superstitious regard on the part of the Hindoos, who adorn their dark hair with the rich orange-coloured flowers."

RANDIA MUSSANDÆ, D.C.

Two years ago I brought seeds of this plant down from Belle Vue, a mountainous district in the parish of St. Andrew's, Grenada, some of which were distributed to correspondents in England, and elsewhere subsequently, and some were sown in the Botanic Garden. One of the plants raised is 4 feet high, bushy, and is in a vigorous condition. This was planted in the Botanic Garden, which lies a few feet only above sea-level, and to-day (June 8) opened its first flowers. At Belle Vue a cool atmosphere is continually felt, quite different to that of the Botanic Garden, especially during the dry season, and where the surroundings both in soil and climate are so contrary to those where the plant was obtained, and where it apparently was growing wild. This is another proof that plants brought down from the mountains will sometimes grow and thrive in open shore districts, but it is exceptional. The ground in which our plant is growing is thoroughly exposed to the mid-day tropical sun, and consists of a shaly substance, and consequently is in itself of a poor and unproductive nature. The flowers of *R. Mussandæ* are fragrant, with a slender tube 3 inches long, and the pointed petals pure white above; its leaves are small, and of a glossy-green, borne upon thickly-set branches. *W. E. Broadway, Grenada.*

ROYAL HORTICULTURAL SOCIETY OF VICTORIA.

It will be satisfactory to many who are interested in the colony of Victoria to learn that after the great loss sustained by the death of Baron Von Mueller the authorities at Melbourne set to work to reorganise their Royal Horticultural Society. Great satisfaction is felt at the appointment of the new Director, Mr. C. Bogue Luffmann, as a result of the recent competition for the post. The gardens and experimental grounds, which cover 42 acres, have the advantage of being watered by the river Yarra. The duties of the Director include the delivery of public lectures, and the training a limited number of students, and he will be ably assisted by Mr. McAlpine, Government Pathologist; Mr. French, Government Botanist, and other distinguished men. The extensive gardens will afford Mr. Luffmann scope for turning to useful account his world-wide knowledge of horticulture. *W. Roupell, Streatham Hill, S.W.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

The Double-flowered White Rocket.—This old-fashioned border-plant is deserving of general cultivation, producing its fine spikes of double, pure white, and fragrant blossoms in profusion, and usually towards the end of May, and continuing in flower more or less for at least two months. When allowed to stand for several years without removal, the clumps dwindle, and the flower-spikes become short, and sparsely set with blossoms; but when they are lifted annually, divided carefully, and re-planted, its vigour is maintained. It is also advisable to grow some plants of it in the reserve-garden, where propagation can be carried out without being obliged to have regard to appearances; and the change from the soil of the reserve-garden to that of the flower-garden borders is always of service in maintaining the stock of plants in good health. Dry and hot summers have sometimes disastrous effects on Sweet Rockets unless water can be freely afforded them. The plants are also subject to a disease, or rust, similar in appearance to that which has rendered Hollyhock culture difficult; and when nothing is done to check the disease, the plants succumb, and the older the sooner. The flowering of this plant being nearly over, it is now the proper season to take up the plants, and divide and re-plant them. In the present

state of the weather, it would, however, not be advisable to do this, but to wait till dull or showery weather ensue, before undertaking the operation. If the old flower-spikes have been cut down as they have gone out of flower, many growths will have come from the base, which afford a ready means of propagating the plant. The remaining flower stems may be cut off, the plants lifted, and the young growths pulled into pieces, each with some roots attached, and be planted in a new position in the borders or in the reserve garden. If no change of ground can be afforded, a heavy dressing of rotten manure should be dug in, with a small quantity of new loam added, which will enable the plants to get a good start. Afford water copiously to settle the soil about the roots, and sprinkle the leaves occasionally late in the afternoon till the plants are established.

Hints on a Variety of Operations.—At the time of writing the great heat and excessive drought are distressing many kinds of plants in the flower garden and flower borders, and although *Pelargoniums* are a blaze of colour, shrubby *Calceolarias* although flowering perfectly are beginning to give out, and here and there a plant is dead or dying, it will do something to relieve them if spent flowers are removed, and water be copiously afforded at the root, following the first application with a mulch 1 inch thick of half-rotten leaves or coco-fibre. *Heliotropes*, tuberous *Begonias*, *Fuchsias*, *Verbenas*, *Violas*, and subtropical plants generally should also be well supplied with moisture at the root. The flowers of the Sweet Pea are very short lived in hot weather, and in order to keep up a succession of flowers, the seed-pods should be removed as soon as the flowers drop. Trees and shrubs planted last winter and spring will be sure to require water at the root, and an occasional overhead syringing will do them much good, preventing a check to growth both at the roots and at the top. If mulching was not applied after planting, litter or rotten-manure should now be placed over the roots. Earwigs are sure to infest the Dahlias, and should be constantly caught in bean-haulm and pots of hay placed on the top of the Dahlia-stakes, or fixed on the top of shorter stakes placed out of sight among the plants. A daily examination of these traps should be made for captured insects. Do not let the Dahlia plants become a tangle of shoots, but thin out the latter; and to increase the size of the double flowers a certain amount of disbudding should be practised. Let each plant have a basin 2 feet wide and 3 inches deep made with the draw-hoe, that is drawing the soil to a depth of 1 inch outwards from the plant, and form a wall with this 2 inches high; and during the hot weather, once a week, fill this space with water and occasionally with manure-water. If the ground be neatly raked, and a crumbly tilth maintained by using the Dutch-hoe, much of the moisture in the soil will be preserved, and the plants grow vigorously accordingly.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

Phalenopsis.—The earlier-flowering species, viz. *P. amabilis*, *P. Schilleriana*, *P. Aphrodite*, *P. Stuartiana*, *P. Sanderiana*, *P. intermedia*, and *P. leucorhoda*, the leaves of which will have made much progress, will need for some time longer to be kept moist at the root. The chief cause of failure with *Phalenopsis* may be traced to their being kept in saturated materials, and in a very hot house that is ill ventilated. As a matter of fact, the plants require fresh air during the present season, in which growth is chiefly made, when the outside air is sufficiently warm not to chill the plants. Ventilation is best effected by opening the lower ventilators a little early in the morning, and when the inside warmth increases, gradually admit more fresh air. If practicable, the upper ventilators should be made use of during the middle hours of the day, so as to get rid of superfluous moisture; and if the warmth should then decrease, or there is any draught, the bottom ventilators should be closed wholly or partially. A high sun-heated temperature is good for these plants; but artificial heat, if used to any great extent, soon weakens them. It is well, therefore, to close the house early in the afternoon, well damping the floors, stages, &c. During such warm weather as that at present prevailing, the bottom ventilators may be opened a small space the last thing at night. All of the species do most satisfactorily when hung up near the glass on the north or shady side of a house where there is plenty of subdued light, but no direct sunshine reaches them. Suspension not only favours and induces the

tion of stout leaves, capable of enduring their time, but slugs and cockroaches cannot reach

If the sphagnum-moss about the plants is ing, it should be picked out from between the and replaced with fresh. *P. Luddemanniana*, *trapsis*, *P. Maria*, *P. violacea*, *P. speciosa*, *P. rana*, and *P. cornu-cervi*, which have recently ed flowering, should be placed in new baskets. oiage of these green-leaved varieties soon loses h glossy colouring, and gets shrivelled and un- ay-looking if exposed to strong light, and from i, even with the best kind of treatment, it takes e time to recover. To obtain the best results, a on should be selected in the East India-house or stove, where, in addition to the ordinary shading e, the glass immediately above the plants should inted with green "summer cloud," or if prefer- a piece of thin shading material permanently d on to the roof and kept there till the sun has s ardency. Other species of Orchids thriving in ilar position, are *Batemannia Burti*, *B. Colleyi*, *strea Klabochorum*, *P. Lehmanni*, *P. Dayana*, *rina*, *Huntleya Wallesiana*, *H. meleagris*, *Bollea tis*, *B. Schroderiana*, *Warszewiczella Wend-* *W. discolor*, *Stenia (Chondrorhyncha) fimbriata*, *estertonii*, *S. pallida*, *Phaius tuberculatus*, *Angra- Kotchyi*, *Thrixpernum Berkeleyi*, and *Kefer- a graminea*.

the cool (*Masdevallia*) house at Burford Lodge, pretty Orchids are now flowering, viz., *Odonto- ara aspidorhinum* and *Promeneia citrina*, either ich would be a nice addition to any collection of ds. The *Odontoglossum* requires to be grown pot raised up to the roof. It is a very free ring and easily-cultivated plant. The dwarf lenoca succeeds best in shallow pans, in well- ed peat and sphagnum-moss, and hung up along- of *Odontoglossums Rosii* or *O. Cervantesii*, and ed exactly like those. The pretty *Angraecum um* and *Aerides japonicum* should, whilst this eather lasts, be accommodated in the coolest

THE KITCHEN GARDEN.

By W. POPK, Gardener, Highclere Castle, Newbury.

celery.—There should be no delay in proceeding the moulding-up of the earliest crops. Blanched y being in much request late in the month and eptember, a month is not sufficient time in h to blanch the sticks of it for use as a salad. e who prefer the method of earthing-up piece- should now afford the final earthing to the et rows; whilst those who apply the first ment of soil should water the trenches copiously der that there may not be any check induced yness at the root whilst blanching is in progress. ed, the great objection to the old-fashioned plan adually earthing-up the plants is the impossibility applying water afterwards, and whilst growth is progressing, added to which is the evil of some- e burying the heart's leaves too deeply, thus ng early decay. If earthing be delayed till the s have reached full size, time and labour are omised, and the foregoing disadvantages obviated ording one earthing-up instead of several; but very necessary to examine the plants, and secure eaves against the wind by loosely binding them her with broad strips of matting occasionally. re beginning to earth-up a row, it is a good prac- to strew quicklime freely along on both sides of row, doing this two or three times whilst the ing-up is in progress. By doing this, slugs and ns are kept away from the plants. For exhibi- purposes, bindings of brown or water-proof paper very generally preferred. At this season four to weeks should be allowed for perfect blanching, at for late autumn shows six weeks is not too a time. Should the Celery-fly be noticed on plant, dust the leaves lightly with fresh soot in early morning occasionally, but if they have dy been at work, which will be seen by the n spots appearing here and there on the foliage a containing a maggot) search for the maggot and h it between the finger and thumb, or pick off affected part of leaf, and burn it.

potatoes.—The early varieties are now sufficiently ared in some parts of the country for digging storing, and as wet weather may occur and set up often does, the ordinary disease of the Potato, all y varieties should be stored whilst the weather ins dry. Do not store the tubers in bulk ediate after digging them, but spread them y for a time in a cool, dark yet airy place. e intended for sets another year need not be

kept in the dark, although they should be placed under cover.

Winter Greens, or Kale.—If the planting out of these vegetables is not completed, it should be done forthwith, and the lifting of the early Potato crop will afford the land for the purpose if it be levelled and drills drawn on which to plant with a long dibber. Should the plants have been raised in nurse beds, lift them carefully with a trowel, and plant with the same implement, affording water copiously soon afterwards. Earlier plantations should be hoed to keep a crumbly tilth, than which nothing conserves the moisture in the ground better, and a little later earthing up may be done. The Asparagus Kale, otherwise Buda and Jerusalem Kale, is a particularly bardy, well-flavoured kind that keeps till the spring, and is one to plant in quantity.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

The Fruit Room.—Whilst there is yet time, and early Apples such as Mr. Gladstone, Juneating (red), Beauty of Bath, Irish Peach, Astrachan (red), and Keswick Codlin (Apples), and of Pears Early Benoit, Citron des Carmes, Clapp's Favourite, Jargonelle and River's Beacon, are still on the trees, whitewash with fresh lime the walls and ceiling, and scrub the woodwork with soapsuds, and leave doors and windows open day and night till the fruit is placed in it. A little size should be dissolved in hot water, and put in the lime-wash before applying it to the walls, &c., so as to prevent the lime coming off when touched.

Preserving Fruits.—Apricots and the true Green-gage Plums should be gathered in due time for preserving and bottling. Pond's Seedling, Monarch, Kirk's, Belgian Purple, Diamond, and similar culi- nary varieties, should be gathered for bottling. Peaches and Nectarines are similarly treated, and where this is done care should be exercised in send- ing in a due supply of both fruits for jam and bottling when most plentiful during the present month.

Morello Cherries where preserved in brandy, &c., should be seen to before they get too ripe, selecting the finest fruit—which should be firm and well coloured—for this purpose. Ample supplies of Gooseberries and red Currants should be sent to the stillroom, the former for jam, &c., and the latter for jelly and bottling. A good breadth of red Currants should be netted over for meeting the daily demand for red Currant tarts as long as the fruit can be had fresh from the trees, which may with care be ex- tended into the month of September.

Autumn-bearing Raspberries and Strawberries should be afforded good supplies of water at the roots as often as circumstances permit, in order to swell and perfect the fruit. Where there is a good supply of water at command, and sufficient labour to apply it to fruit trees in general and most garden crops during the hot weather, great benefit will accrue.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoe Park, Luton.

Lachenalias.—The tubers may now be potted or placed in baskets, as after this date the roots become active, and it is very essential that the operation of potting, &c., be finished forthwith. The tubers should be shaken out of the old soil, and placed in a compost consisting of loam four parts, leaf-mould and well-decayed manure each one part, and plenty of sharp sand. If pots of 5 inches in diameter be used, a dozen tubers can be readily accommodated in each, these being sized before potting them. Let the pots be well crocked, and after potting the tubers, stand the pots on a cool bottom in a greenhouse or cold frame, affording no water till it is seen that root- action is advancing. *Lachenalias* form splendid sub- jects for planting in baskets for greenhouse decora- tion, and considering that the plant is easily grown, it is a matter of surprise amateurs and professionals do not grow it more commonly. In preparing a basket, first line the sides all round with living sphagnum-moss, and then proceed to fill in the soil by degrees, inserting the tubers at a variety of depths as the soil rises in the basket, and in such a manner that the growths will readily push their way through the meshes of the wire-work, and finish off the same as with pots. Baskets when finished may be sus- pended at the first on the shady side of a cool green- house or fernery, but when growth has begun, more light is needed, but cold draughts must be avoided

or the foliage will get disfigured. The most suitable varieties for baskets are *L. tricolor*, *L. Nelsoni*, *L. pendula*, and *L. luteola*.

Kalanthes (Crassula) coccinea and others.—If growth for the season is completed, remove the plants to a coal-ash bed in a sunny position out of doors, the foot of a wall having a glass coping being a capital place for them; the aim of the cultivator being to mature the wood perfectly, and with this intent they should be kept rather dry at the roots, but not so as to cause flagging. About the end of September they must be again placed under glass in a dry airy pit, only sufficient fire-heat being afforded as will exclude frost.

General Work.—Gradually withhold water from *Amaryllis* as the leaves begin to turn of a yellow tinge. Pot up batches of Roman Hyacinths for early forcing; and if large quantities of bloom are required for cutting, some part of the stock of these bulbs may with economy of space be placed in boxes, those in pots being used for decorative purposes.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Tomatoes.—Keep the plants in full bearing and good health by applications of manure-water and top- dressing of loam and dung. Remove all weak growths, and some of the foliage, so as to expose the fruits, but tie in sufficient growth to keep the trellis covered nicely with foliage. Young plants for autumn and winter fruiting may still be planted if a constant succession of fruit is required, encouraging the plants to make sturdy growth, but not affording manure till a good crop of fruit has set. [Mr. Harris writes that he has been ill, and unable to supply his Calendrical article as usual. Ed.]

A NOVEL BOTANICAL COMPETITION is de- scribed in the current issue of *Science Gossip*, and the editor of that paper is of opinion that it will provide valuable scientific records of the growth and habits of plants not generally recognised, as well as amuse- ment. Three photographs, not exceeding half-plate size, are to be taken of uncommon, local, or rare plants: (a) best showing the habit of growth when flowering, fruit, or otherwise; (b) of the growing plant and its immediate surroundings; (c) of the near landscape to show the character of the plant's station. Two prizes (books to the value of 50s. and 30s. respectively) are offered, and the chief points to be considered in making the awards will be (a) the variety of the species photographed; (b) the grasp of detail, such as the natural position, the flowering parts and other surroundings, in case any appear; (c) the excellence of the photography. Any kinds of plants are available for the purpose of the competition, including Ferns, mosses, fungi, marine Algae, &c. *Pharmaceutical Journal*.

CARRIERS OF COMMERCE.—In our issue for June 19, under the heading "Then and Now," we placed in contrast the trade returns of 1837 and 1897, clearly showing the enormous increase in both imports and exports—the growth of a peaceful reign of sixty years. But no attention was paid to the increase in the carrying power of our mercantile navy. This has been simply enormous. Taking up the Naviga- tion Returns for the past year, we find the tonnage of the ships entered with cargoes from foreign countries and British possessions is placed at 33,479,592 tons; the tonnage cleared being 37,703,217. These figures may be again divided as follows:—Entered from foreign countries, 28,677,465 tons; from Brit- ish possessions and colonies, 4,802,127 tons. The tonnage cleared was, to foreign countries, 32,111,158; to Briti-h possessions and colonies, 5,592,059 tons. The details respecting the ton- nage employed in the first year of the Queen's reign are meagre, but they are wonderfully sug- gestive. The entries are 3,215,829 tons; the clear- ances foot up 2,578,018 tons—these figures repre- senting both foreign and colonial trade. It should not be overlooked, that one steamer now-a-days often does the work of half-a-dozen sailing ships—its tonnage counting at every entry and clearance; all the same, the figures are of so stupendous a character and value as to warrant special attention being drawn to them in this place.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Aug. 10 { Royal Horticultural Society's Committee: Lecture, by Mr. J. Douglas, on "Cross-fertilisation of Florists' Flowers," at 8 P.M.
Anniversary of the Royal Botanic Society, at 1 P.M.

SHOWS.

WEDNESDAY, Aug. 11 { Cardiff Horticultural Society (two days).
Bishop's Stortford.

THURSDAY, Aug. 12—Taunton Horticultural Society.

SALE.

FRIDAY, Aug. 13 { Imported and Established Orchids
at Protheroe and Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—62.8°.

ACTUAL TEMPERATURES:—

LONDON.—August 4: Max., 85°; Min., 62°.

PROVINCES.—August 4 (6 P.M.): Max., 79°, at York; Min., 58°, at Sumburgh Head.

As the Royal Horticultural Society has now held examinations in horticulture for five consecutive years, it may not be uninteresting to compare the results obtained, and see what progress has been made. As percentages alone can give strictly accurate comparisons, the following table will be found, so to say, almost to speak for itself; but there are some points to be especially noted—

	1893 (204)	1894 (120)	1895 (169)	1896 (152)	1897 (144)
1st Class	5.8	8.0	7.1	10.5	48.3
2nd Class	17.4	29.3	21.1	34.8	29.8
3rd Class	36.2	37.3	43.2	32.3	15.2
Not Classified	40.1	26.2	27.7	22.3	6.5

As might have been expected when it was first proposed to hold an examination in the Principles and Practice of Horticulture, the examinees did not know what would be expected of them, nor what sort of questions would be set for them to answer, nor probably the limits of their own knowledge; consequently, we are not very much surprised to find 40 per cent. were not classed at all, as obtaining less than one-third of the total number of marks obtainable (300). A larger number entered for the first examination, than in any subsequent year—probably from the reasons given above. Another natural result was the very small percentage of first-class students* (5.8) and the

high one of the third, viz., 36.2, the proportion therefore between these classes being as 1 to 6.

It is probable, as before stated, that in the first year many entered quite unprepared for the examination. This is seen in the large entry of 204, of which nearly one-quarter were rejected, and it is illustrated by the following replies which were received on that occasion:—

"Plants take the nourishment from the ground to keep it alive. And it does keep on spreading about as the plants do grow up and straight out."

"The wireworm is a worm that is about when it does rain and eat a lot of things and destroy them like the slugs do."

"The wireworms is one of the most dangerous animals we have to plants; if it should happen to discover the plants they will destroy all."

"Plants take from the soil lime, magnesia, iron, phosphorus, potash, sulphur, which is the white part of the ashes. It is taken up by the carbon of the air igniting all these other chemicals together and taken up as plant food."

In the second year (1894), the public having had an opportunity of seeing the questions set in the previous year, and the examinees themselves of being tested, a smaller number of candidates presented themselves (126), and a much smaller proportion were unclassified (26.2 per cent.). Moreover, the number of the first-class students rose from 5.8 to 8.0, and that of the second class from 17.4 to 29.3; the proportion of first to third being now 1 to 5.

In the third year (1895) a curious lapse took place. Just as in 1893 there was a large supply of mediocre talent, the total entry being again large (169); so again, the results were repeated, though in a less marked degree. Thus we find a slight decrease in the first class, a still greater one in the second, while the third class has increased; the proportion between the first and third having returned to that of the first year, or one to six. The amount unclassified is nearly the same, however, as in 1894.

In 1896, we seem to start on somewhat fresh lines. The "boom of mediocracy" of 1893 and 1895 is rapidly disappearing, and we now see a decided turn of the scale for the better. Comparing the results of 1896 with those of 1895, the first class shows marked increase, while the third has decidedly diminished, the proportion of these two classes being now as 1 to 3.

In the present year (1897), though the entry (excepting that of the first year) is larger than ever, yet the high standard begun in 1896 has not only been well sustained, but greatly exceeded. The first-class has suddenly risen from 10.5 to 48.3 per cent., while the third has fallen from 32.3 to 15.2 per cent., the proportion between these two classes being actually reversed, or 3 to 1; for last year it was as 1 to 3. The number of unclassified (6.5 per cent.) is fast approaching zero.

It is somewhat difficult to account for the astonishing improvement in the present year. Had the paper been particularly easy and simple, of course, more questions would have been answered well; but they do not seem to be of a different standard from those of previous years. Hence, we must look to the students themselves, and this is very encouraging. Looking at the numbers unclassified (excepting the year 1895), they have steadily declined from 40 to 6½ per cent.

At the same time, it must be remembered that a large proportion of the candidates had been trained at Swanley or at Chelmsford, and whilst the result is highly creditable to the tuition

given at those establishments, it shows how unfair is the competition to those who have not had similar advantages. Making all due allowance for these circumstances, the number of first-class certificates given this year seems still wonderfully large, and suggests some lowering of the standard on the part of the examiners. This is particularly shown in the fact that one of the candidates is actually credited with the full number of marks.

We have, of course, no knowledge of the paper in question, but long experience in examining, and a large acquaintance both with examiners and examinees lead us to the belief that no examination-paper on such a subject as horticulture, could be so absolutely perfect as to merit the full number of marks. Here, perhaps, the "personal equation" comes in, and the standard set up by one examiner differs from that adopted by another. In any case, a few marks more or fewer does not affect the general result, which is highly satisfactory.

The entry dropped to 126 in 1894; but the increase now appears to be steadily progressing, accompanied, however, by vastly improved results. These comparisons give one the impression that the examination is valued, and that young men and women are determined to get as well placed as they possibly can. Perhaps a few more prizes, if any one will generously offer them—say, for the head student of each class—might be further encouraging, and very acceptable.

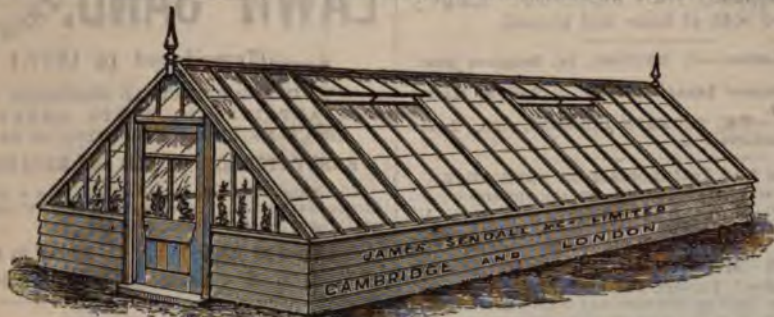
It is suggested in some quarters that the examination should be made more practical, and that the technical details of manipulation should be assessed as well as the knowledge which can be obtained from books or lectures. From this point of view the following considerations present themselves:—First, the examination is intended for students and beginners, not for experts. Long practice alone can make an expert. All that an examination under the present system can do is to test the intelligence of the candidate, and ascertain how he has been trained in the acquirement of that knowledge which will be of service to him in his future career as a gardener.

And then, again, the training that a young man gets at a horticultural school is distinctly practical. If it were not so, Swanley and Chelmsford students would not take so high a place in the class-lists as they do. Well grounded as we must assume these students to be, and familiarised with practical detail as much as possible, it is still clear that experience alone can make them good gardeners. Trained as they have been, they should acquire that experience much more quickly and easily than if they had not had the advantage of acquiring useful knowledge. It remains now for the candidates to apply and make use of the knowledge they have gained. If they are incapable of doing this, their tuition has been vain, and they will never rise beyond the rank-and-file. But if to the education they have had, they now add the lessons of practical gardening in properly-equipped garden establishments, they should be capable not only of securing their own advancement, but of doing their share in the promotion of horticulture in general. Of course, very much depends on the character of the individual, and we do not know of any mere examination, whether of student or of expert, that would be of any use as a test of character. Having given the lad the best and most complete training that is possible, it must rest mainly with the individual as to what use he will make of it.

* In this first examination there were two grades; for comparison, the numbers in the first, second, and third classes are added together, respectively.

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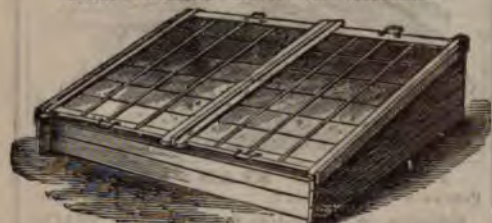
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FIG. 25.—A GROUP OF FOLIAGE AND FLOWERING PLANTS, WITH POOL AND WATER-LILIES.

(Arranged in the Queen's Tent on the occasion of a recent visit of Members of the House of Commons to Windsor. See p. 89.)

GROUP IN THE QUEEN'S TENT, WINDSOR, IN JULY.—Our supplementary illustration affords an idea of a novel kind of group erected by Mr. OWEN THOMAS in the Queen's tent on the occasion of the visit of the members of the House of Commons to Windsor in July. The pool and fountain with Water Lilies in flower, and other aquatics, was a happy thought of the Royal gardener, suggestive of coolness, and the predominance of foliage over flowering plants in the surrounding group gave additional force to this idea.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Fruit and Floral Committees of the Royal Horticultural Society will be held on Tuesday, August 10, in the Drill Hall, James Street, Victoria Street, Westminster, from 1 to 5 P.M. A Lecture on "Cross Fertilisation of Florists' Flowers" will be given by Mr. JAMES DOUGLAS, at 3 o'clock.

"BOTANICAL MAGAZINE."—In the August number of this ever-valuable periodical, edited by Sir JOSEPH HOOKER, the following plants are figured and described:—

Lycoris squamigera, t. 7547, differs from *Amaryllis* in its black seed-coat. It is a bulbous plant, native of Japan, and much resembles *A. Belladonna*. It is grown at Kew in an open border against the south wall of a stove. (See *Gardeners' Chronicle*, 1897, i, p. 137, fig. 38.)

Gasteria fusco-punctata, t. 7548 (the text accompanying this plate is by error marked 7549.—We follow the numbering of the plate rather than of the text). *Gasteria fusco-punctata* is a handsome species with broadly lanceolate fleshy leaves, glaucous-green spotted with brown, and erect branching panicles of pink flowers.

Dendrobium denudans, t. 7549 (by accident the text is indicated as 7548).—A native of the temperate Himalayas. It has small, slender pseudo-bulbs, deciduous linear oblong leaves, and axillary nodding racemes of whitish flowers; the front lobe of the lip is 3-lobulate, the margins coarsely toothed.

Ficus erecta var. *Sieboldii*, t. 7550.—Dr. KING describes this species as excessively variable; the form here figured is of Japanese origin, and has relatively shortly stalked, linear lanceolate entire leaves, with an occasional tendency to lobation; fruits club shaped, orange.

Oncorchis purpurascens, Lindley, t. 7551.—A tuberous Orchid from the Mascarene Islands: the leaves are solitary lanceolate; the flowers, one or two in number, are borne at the end of a long slender erect stalk. Each flower is about 1½ inch in its longest diameter, sepals and petals small, lip projecting, conspicuous, three-lobed, rosy-lilac in colour, and provided at the base with a long spur. Sir JOSEPH HOOKER points out its close resemblance to *Habenaria*.

ROYAL BOTANIC SOCIETY.—At the annual meeting to be held in the Gardens, Regent's Park, on Tuesday, August 10, Mr. J. S. RUBINSTEIN will, pursuant to notice, bring forward motions recommending the Council (a) to establish classes in the gardens for the study of botany, to be open to all students; (b) to invite the Royal Horticultural Society to confer as to the feasibility of effecting a union of the two societies; (c) to increase the facilities for the holding of exhibitions, garden-parties, or receptions in the Gardens by local authorities and by leading societies and institutions. The meeting will be held in the Gardens at 1 P.M.

THE TEMPERATE-HOUSE AT KEW.—The new wing of this house was opened on Sunday last. It is 114 feet in length and 63 feet wide, according to the measurements given in the *Journal of Horticulture*. We shall take an early opportunity of advertising to this important but long-delayed addition to the Royal Gardens.

RATING OF GLASSHOUSES IN NURSERIES.—We regret to have to call attention to the Rating Case reported in our Law Notes. Hitherto gardeners have relied on the Worthing Case as their charter in such matters, but we must now await the result of

the Appeal before we can know what the law really is. The judges seem as much perplexed as other people for the two learned brothers came to opposite conclusions in their interpretation of the Act of Parliament. These delays, and still more these uncertainties, inflict cruel injustice on the cultivators. The Market Gardeners', Nurserymen's, and Farmers' Association has charge of the interests of the market gardeners in this particular case.

THE HISTORY OF THE SWEET PEA.—In the *Florists' Exchange* for July 17, Mr. S. B. DICKS contributes an article on this subject, with illustrations copied from some of the older books. Mr. DICKS traces the Sweet Pea to JOHN BAUHIN'S *Historia*, 1650. The plant itself is a native of Sicily, but one form of it was considered to have come from Ceylon, and was accordingly called by BURMANN *Lathyrus zeylanicus*. The word "nobis," which has misled Mr. DICKS, of course applies to BURMANN himself! How the mistake arose of considering the Sweet Pea as a native of Ceylon, we cannot tell. For those with leisure it would, no doubt, form an interesting subject of enquiry. It is certain that neither BAKER, in HOOKER'S *Flora of British India*, nor TRIMEN in *Handbook to the Flora of Ceylon*, admits the plant as a native of the island, though it is likely enough to have been taken there.

THE GIANT PRIMROSE.—Under the name of "Evelyn Arkwright," this form of the wild Primrose, remarkable for the size of its blossoms, which measure from 2½ to 2½ inches in diameter, is being distributed. Application should be made to Mr. PARR, Estate Office, Hampton Court, Leominster, Herefordshire.

THE YORKSHIRE COLLEGE, LEEDS.—Dr. JAMES CLARK, who has been successfully engaged for the past six years in University extension work in agriculture and horticulture, was in March last offered and accepted the Professorship of Agriculture in the Yorkshire College, and the Directorship of the Agricultural department. It is the intention of Professor CLARK to introduce regular horticulture into the college curriculum. Below is a prospectus of a short preliminary course on fruit culture which has just been completed:—

SYLLABUS OF LECTURES.—The tree and its requirements, including food, moisture, air, light, and heat. General effects produced by excess or deficiency of these necessary conditions of growth. Uses of the different parts of the tree, with a review of the way in which each part performs its work in relation to the rest. The relations between roots and soil.

The growth of the tree. Leaf-buds and flower-buds. Development of the branches. The ripening of the wood.

The flower and its parts. Fertilisation. The growth of the fruit.

Preparation of different classes of soil for fruit culture. Precautions against unfavourable conditions. Selection and planting of fruit-trees. Choice of position. Peculiarities of the different stocks in common use. General characteristics and treatment of Apples, Pears, Plums, Cherries, Gooseberries, Currants, Raspberries, Strawberries, Vines, and Peaches. Choice of varieties to suit local conditions.

Principles of pruning, branch and root. Training of fruit-trees. Propagation of fruit-trees.

Principles of manuring. Characteristics, properties, and uses of farm-yard manure, and of the artificial manures most serviceable in fruit culture. The mixing of manures.

Diseases and insect-pests; precautions, modes of prevention, and remedies.

The gathering, storing, grading, and marketing of fruit.

THE CHERRY CROP.—The *Sussex Daily News* of July 31 says, that Cherry-picking is practically finished in Kent. The crop has been a great failure, the yield being so scanty on many trees that the fruit was not gathered at all, as the labour entailed would have exceeded the value of the cherries. The prospects are fairly good as regards Plums and Apples, except superior kinds, which will be scarce. Harvesting has commenced in the Amberley district. The crops are heavy, and already a good deal of Wheat has been cocked.

RAVENS COURT PARK, HAMMERSMITH.—A new portion of the park facing the high-road, and which three years ago was covered with Nettles, has been converted by Mr. W. B. GINGELL, the Superintendent, into a delightful garden, containing

several very noticeable happy combinations in the borders; as, for instance, *Corylus avellana purpurea* (the Purple-nut), and *Acer Negundo variegatum*; *Prunus Pissardi*, purple-leaved Plum, mingled with that capital town-plant, the Golden-leaved Privet. A bed filled with *Pentstemons* of the new type attracts much attention from visitors. One of the very best of the yellow-flowered bedding *Violas*—Bullion—is effectively used as a ground-work plant beneath *Lobelia cardinalis* Queen Victoria. A scroll, formerly devoted to carpet-bedding is now planted with tuberous *Begonias*, which are flowering with remarkable freedom. *Fuchsias* are effectively used in the various portions of the park set apart for flower-gardening purposes.

ISLE OF WIGHT HORTICULTURAL SHOWS.—During the last week in July there were four cottage garden shows in the rural parts of the garden Isle:—Brightstone on July 27, where there was an excellent show of fruits, flowers, vegetables, and plants. This picturesque and fertile district is capable and does produce some fine horticultural productions. The inhabitants are greatly encouraged in this work by Sir Chas. Seely, Lady Mary Gordon, Rev. G. E. Jeans, and the Rev. L. B. Morris, not only by pecuniary aid, but by staging exhibits of a high quality not for competition, but as a standard for the cottagers to aim at. Arreton show was held on July 28, when the exhibits were not so numerous as in former years, but a great advancement in the standard of excellence was made. Carisbrooke and Northwood shows were held on July 29. The competition was keen at both shows. The table decorations at Carisbrooke were well done, and reflected great credit on many of the exhibitors for their taste. The Isle of Wight Horticultural Improvement Association awarded their Certificate for Cultural Merit to Mr. A. Went of Brightstone, Mr. Geo. Lipscombe of Arreton, Mr. W. Matthews of Carisbrooke, and to Mr. A. J. Philpot of Northwood.

NEW GOOSEBERRIES.—Do not think, gentle reader, that Messrs. VITCH or their expert hybridiser, Mr. SEDEN, confine themselves to the raising and rearing of extraordinary Orchid hybrids. No; they are not above improving the humble Gooseberry, and two specimens before us show that they are quite equal to the production of extraordinary Gooseberries—appropriate to the season. "Langley Gage" is one with fruits rather more than 1 inch in long diameter, oblong, yellow, slightly hairy, and with a sweet flavour, agreeably mixed with a suspicion of acid. Langley Beauty is more fitted for the exhibition-table, having large oblong or roundish yellow berries, 1½ inch in length, slightly hairy, and with an agreeable flavour. We cannot say anything as to their habit and productiveness, but the fruits are first class.

ROBINSONELLA.—Under this name, Messrs. ROSE and E. G. BAKER describe some arborescent malvaceous plants, which are representatives of a new genus. *R. cordata*, *R. divergens*, and *R. Lindeniana* are natives of Mexico (Oaxaca), Costa Rica, and Vera Cruz respectively. The plants are figured and described in the number of the *Garden and Forest* for June 23, 1897.

NEW VARIETIES OF BEDDING VIOLAS.—We have lately received from Mr. J. GRIEVE, of Redbraes Nursery, Broughton Road, Edinburgh, two varieties of bedding Viola, so good in colour that they are worthy of special notice. One, named Joseph, is of a purplish-brown, the sender calls it bronzy-brown, of a rich shade, admirable as a filling for small beds, or a band of colour round some yellow coloured flower, say a Pansy, *Gazania uniflora*, Haage's dwarf Zinnia, or a dwarf *Calceolaria*. The other variety, Lady McDonald, has yellow blossoms rayed slightly with purple, but not sufficient to spoil the effect of the yellow colour when viewed at the distance of four feet. It is said to possess a good habit, and to be very free flowering. In all the cooler parts of this country, and of course almost anywhere in Scotland, Violas are capital spring and summer flowers. On the cool, moist, green sand and chalk formations, where these approach the surface, and on heavy

leams and clay soils, *Violas* grow and flower well through the summer; but on dry soils and in dry districts and situations, unless much heavy loam and rich manure be incorporated with the staple, the results are apt to be disappointing after May is out.

EDINBURGH SCHOOL OF RURAL ECONOMY.—The Prospectus of the Edinburgh School of Rural Economy for the Session 1897-98 has now been issued. The courses of instruction arranged for this Session are similar to those of last year. Their main features are:—1. A Two Years' Curriculum of Day Classes in Agriculture and allied Sciences; 2. A Course of Day Lectures on Forestry in the University; 3. An extensive series of Evening Classes on Agriculture and allied sciences, embracing Horticulture and Forestry; and 4. The usual Summer Vacation Classes for Schoolmasters, which have been well attended. The work of the first session, embracing mensuration, mechanics, elementary physics and chemistry, botany, book-keeping, drawing and handicraft, practically completes the preliminary education of the student, and gives him an adequate knowledge of the elements of the sciences that have a direct bearing on agriculture. At the same time, his interest in the practical aspect of his work is maintained by such class exercises as those in measuring buildings and fields, in making drawings of these to scale, in woodwork, and in the application of physics in agriculture. The subjects of study in the second session are agriculture, agricultural chemistry, botany, zoology, and entomology; veterinary science, and forestry. The complete course thus aims at fitting a young man to enter with intelligence into his work as a farmer, a gardener, or a forester. It should enable him to understand the greater part of the work that he will see in practice, and to study for himself any special subject that he may afterwards find to be of importance to him. A student who has satisfactorily completed the two years' course of study, and who has had the required experience of practical work on the farm or in the forest, should find himself sufficiently prepared for the examination for the diploma of the Highland and Agricultural Society. Numerous and varied evening classes are provided for those who are otherwise engaged during the day. A specially moderate scale of fees has been arranged. This will be indicated by the fact that the inclusive fee for the first year's entire course in agriculture is five guineas. Copies of the Syllabus are to be had from the Secretary, 3, George IV. Bridge, Edinburgh.

"PAYING PLEASURES OF COUNTRY LIFE" (GEORGE ROUTLEDGE, London, Manchester, and New York), a volume treating of the profitable cultivation of vegetables, by H. W. WARD; of fruit growing, by HARRISON WEIR; poultry keeping, by W. B. TEGE-MEIER; poultry rearing and fattening, by R. L. EVERETT; pigs, by SANDERS SPENCER; flower culture and bees, by R. BEALE; and rabbit-warrens for profit, by Major MORANT. This list of the subjects dealt with, and the names of the authorities, will show our readers what to expect; reliable information by competent writers. Of course, where so many "pleasures" are under consideration, it has been found impossible to deal with any at great length, so that the chief use of the book should be to suggest profitable employments, giving such hints about them as will show the reader whether or not they are suitable to himself; what are the principal features of them, and so on. All these out-door occupations are, as the book tells us, more or less dependent upon our variable climate, upon which, however, too much stress may be laid, with the result that foreign competition takes from us much of the trade which our small growers allow to slip from their own hands. Rabbit-warrens for profit are suggested as an industry upon poor and barren land. The warren has to be surrounded with wire-fencing kept in good repair to prevent the escape of the inmates, and will then, it is calculated, yield a large and rapid return for the small amount of attention afterwards required. The plan is certainly worth trying; indeed, so are the other minor farming industries mentioned in this practical and suggestive little book.

FERTILISERS AND FEEDING-STUFFS ACT, 1893.

—The Board of Agriculture consider it desirable to give publicity to the provisions of the Fertilisers and Feeding-stuffs Act, which came into force on and after January 1, 1894. The provisions of the Act, which applies to wholesale as well as retail sales, may be classified as follows:—(1.) Provisions relating to the warranty to be implied on the sale of a fertiliser or feeding-stuff; (2.) Provisions relating to taking samples and obtaining analyses; and (3.) Provisions relating to offences, penalties, and legal proceedings.

Provisions relating to the Warranty to be implied on the Sale of a Fertiliser, or Feeding-stuff.—Every person who sells a fertiliser (i.e., any article sold as a fertiliser of the soil) which has been manufactured or subjected to any artificial process in the United Kingdom, or imported from abroad, is required to give to the purchaser an invoice stating the name of the fertiliser, and whether it is artificially compounded or not, and what is, at least, the percentage of the nitrogen, phosphates soluble and insoluble (i.e., in water), and potash, if any, contained in the fertiliser, and this invoice is to have effect as a warranty by the seller of the statements contained therein. This provision does not apply to a sale where the whole amount sold at the same time weighs less than half a hundredweight. The fuller details are comprised in a leaflet, to be had, free of charge, from the Secretary of the Board of Agriculture, 4, Whitehall Place, S.W.

LILIUM LONGIFLORUM VAR. HARRISII.

SOMEHOW or other a Japanese variety of Lily found its way to Bermuda, where it speedily made itself so much at home that it now constitutes an important article of trade with the United States and elsewhere. Our illustration (fig. 26, p. 91) shows how well Mr. Wadda, of Cliveden, manages this superb Lily. It is of the greatest value for decorative purposes, or for cutting, and will even bear a slight amount of forcing. We suspect the Lilies represented in our illustration were started in some other house, and transferred later on to the house in which they are shown.

HOME CORRESPONDENCE.

ROYAL GARDENERS' ORPHAN FUND.—The interest of gardeners and all friends of the horticultural fraternity should be stimulated to fresh exertions on behalf of this most useful and economically-managed charity, by the good work that is being done. Orphans who were elected in 1887 and succeeding years are now, after having received the benefits of the Fund until the age of fourteen, being assisted in various ways to make a start in life; and as the number of applications for such help under Rule 13 is likely to increase, I would urge gardeners and others to consider how desirable it is that the Fund should be so strengthened as to allow of every proper case being dealt with satisfactorily. *W. Roupell, Stratham Hill, S.W.*

POTATOS FOR EXHIBITION.—A much-desired point in Potatoes for the exhibition-table is shapeliness and freedom from warts or knobs. This is attained by growing Potatoes for show purposes in prepared soil. Last week I saw some tubers dug in Colonel Halford Thompson's garden at Eastcliffe, Teignmouth, which had been grown in Jadoo-fibre. When the sets were planted, a thin layer of the fibre was placed in the drill under the set, about 2 or 3 inches of Jadoo over and around it, and then it was covered with earth in the usual manner. The varieties thus grown were Boston Q.Q., The Dean, The Gentleman, Winder Castle, London Hero, Veitch's Prize-taker, and Victorious. The heaviest crop lifted was Boston Q.Q., which yielded 5 lb. 2 oz. per plant, or an average of 25 tons per acre; The Gentleman, Prize-taker, and The Dean coming next in point of yield. There was absolutely no disease, and all the tubers came out clean and handsome in shape for their respective kinds. The ground in which the Potatoes were grown is a continuation of a railway embankment, the soil inert and poor, and no manure was used. The net result of the experiment was to show that, as a medium for growing Potatoes

in for the exhibition-table, Jadoo has many advantages over prepared soil which is costly and some in the making. The crop in each heavy, being in the proportion of 22 to 25 acre of marketable tubers. *A. H.*

THE FROST ON JULY 7 AND 8.—I doubt Mr. Kitley's statements respecting reading of the thermometer on the grass on and 8 (see *Gardeners' Chronicle*, p. 74), as in at this place the grass was quite white and morning with hoar-frost; and in one of the gardens only 1½ mile distant, the Scarlet Vegetable Marrows, and Potatoes were cut the ground, and quite blackened by fr numbers of persons have been to see them. I had nothing killed, the gardens at Basing a hill, it was not difficult to remark the ill cold on all kinds of tender plants. *William Basing Park Gardens, Alton, Hants, August*

STRAWBERRY EARLY GIANT.—The above named, being early, and very large, but it is Cockcomb shape, but rather like Sir Joseph and it has very solid flesh, and a fine colour. recently on Mr. Russell of Hatfield, Mytcham borough, and was much pleased with the aspect of the habit and foliage of the plant, which remarkably vigorous and healthy; whilst a bed of Royal Sovereign was suffering from mildew. The Giant will doubtless become giants of the story-books—a killer. It was from Sir J. Paxton and La Grosse Rue Bennett, Farnborough, Hants. [In a circuit by Mr. Russell, we read that fruits of the have been obtained from potted plants 3 oz. each. It is an early variety. Nothing about flavour. *ED.*]

PRIZES BY POINTS.—In a recent report of the Trentham Flower Show, it was mentioned competition in the decorated dinner-table so even, "there was little difference between three." Probably that distinction was covered few points only, yet it is possible that it might have been so diverse in value as £20, £10. The only place, so far as my knowledge where any tangible effort has been made about some equality between the actual exhibit and the prize, is at Carshalton, where August Bank Holiday, the fine local flower always held; and where for several years the liberality of Mr. A. H. Smee, who gives £ purpose in six prizes, a class for nine kinds of flowers, has the prizes awarded on the relative basis. The whole of the collections is pointed on the same scale as that of the County Council. This year there were eight collections entered. The six awarded the points thus: 59 marks, cash 19s. 6d.; 56, 51½, 17s. 2d.; 48½, 16s. 2d.; 46½, 15s. 5d. 12s. 11d. This competition is, all the more the best contested in the show, and the awards create great interest. The pointing shows higher excellence than last year, and was below the points of two years ago. The fiction came from Mr. J. H. Stevens, gr. to E. Esq., of Carshalton, and comprised Cauli Cabbages, Snowdrop Potatoes, Autocrat P White Marrows, Model Turnips, Early Czar Runner Beans, and Excelsior Onions. A sample of Carter's Seedling Pea was in the collections. *A. D.*

PEACH-STONES SPLITTING.—In the "Correspondents," p. 44, July 17, I read that of the above is not known with certainty, it is one of those matters of importance to which should form a subject for investigation research garden. Just so; and I should like to the Editor's remarks that if the real cause preventive could be found apart from out the tree altogether, the person who did and will enlighten the professional gardener be awarded the Victoria Medal of Honour on vacancy occurring. When at Mereworth one tree, a Bellegarde Peach, which every year more or less annoyance in this way, and although precaution was taken, it never improved, had about two dozen of the very best fruit stones. The tree grew freely, made splendid flowers and set plenty of fruit, and with size plenty of them weighed 12 ozs. each largest 14 ozs., and the colour and flavour were alike excellent. It was eventually grafted and replaced with a Nectarine. Another same variety, and which was treated similarly had any split stones except one or two,

usually produced on weak spindly wood, a what common occurrence with most trees. I more than satisfied that it was not from lack of r, severe disbudding, or over-cropping, neither the forcing too hard; but it seemed to be in constitution of the tree, seeing that from the very the evil was present and never was absent. *Markham, Northdown, Margate.*

EARLY-FLOWERING CACTUS-DAHLIA.—For some past it has struck me that a race of Dahlias that old flower somewhat earlier would be most acceptable, and this has been made very evident to me by

true Cactus Dahlias ever seen; and to enable you also to judge on this point, I enclose herewith a bloom of each of the two varieties mentioned above. *John Green, F.R.H.S.* [Very nice blooms of the hybrid Cactus Dahlia. Ed.]

THE DISEASES OF PLANTS.—Would it be possible to obtain from a wide circle of *Gard. Chron.* readers, somewhat on the basis of the Fruit Report, some exact evidence of the prevalence or otherwise of plant pests or diseases? I may be singular in opinion, but I do think that these troubles are far fewer relatively than is usually assumed, and

more efficacious than is attempted cure. But it would all the same be very interesting to learn from reliable sources what are the chief plant diseases or pests in each district, not trifling ones that ordinary culture or treatment can overcome, but enduring ones, such as are of the epidemic order and not easily overcome. Of this class I regard the Potato-fungus; the Hollyhock-fungus, which still holds sway over these garden flowers, is another, and yet we see beautiful double and single Hollyhocks everywhere. Then there is Brassica club, much in evidence in places this year, yet generally regarded as a product of the season more

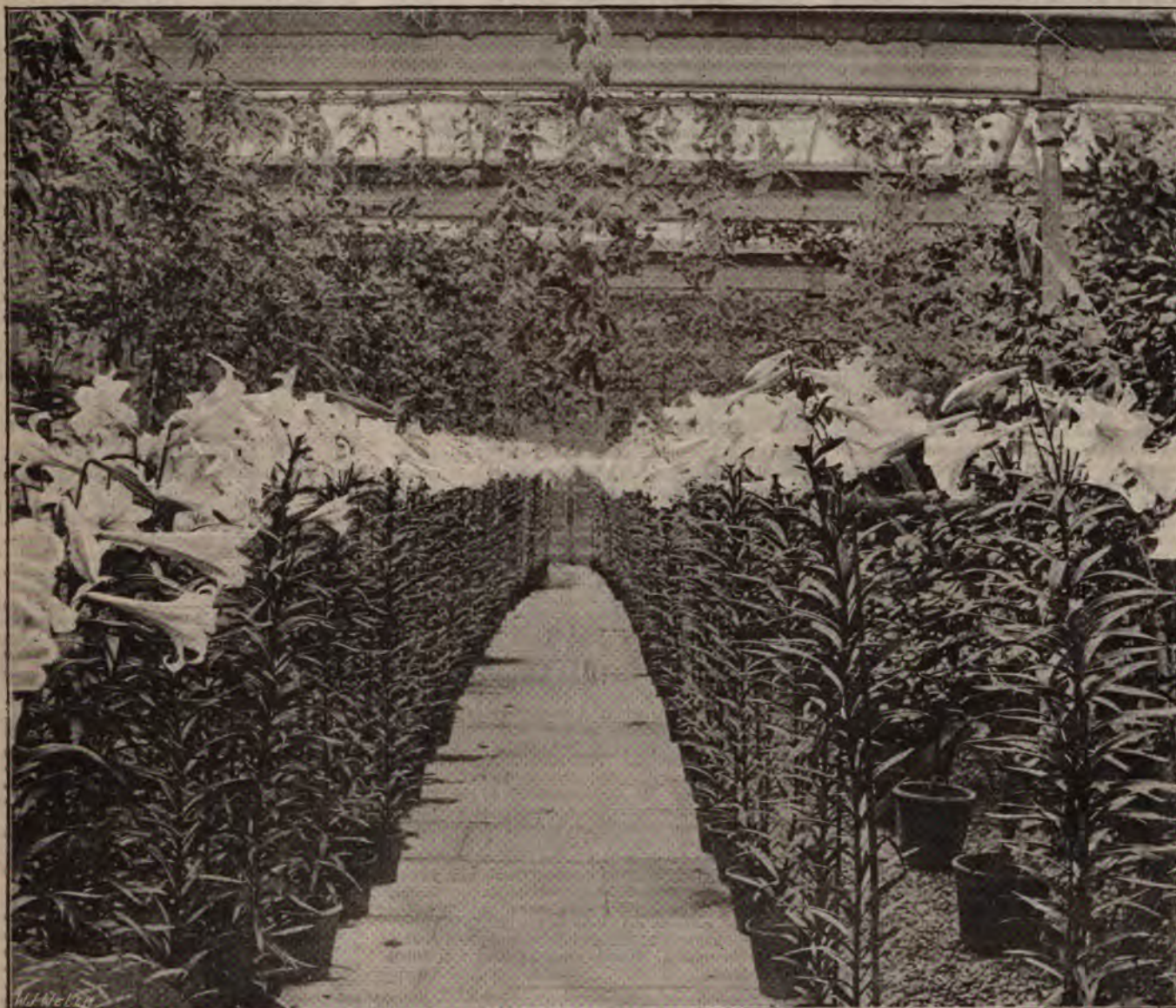


FIG. 26.—A HOUSEFUL OF LILIUM LONGIFLORUM VAR. HARRISII, IN THE GARDENS OF HON. W. W. ASTOR, CLIVEDEN, LUCKS.
(SEE P. 90.)

many letters I annually receive from my customers living north, who are constantly asking me to such as will flower early, as their season is so rt, the frosts often cutting them off before a bloom been cut. In raising new varieties, I have, there- kept this point in view, and, I am very glad to with great success, as will be proved by the that I was awarded two First-class Certificates two of my new varieties—viz., Indian Prince and en's Victory—at the National Rose Society, held orwich on July 15. I believe this is a record for ertificate to any Dahlia at so early a date. In ing them to bloom thus early, nothing has been as to quality, for the two above were considered ll who saw them as the very best examples of the

were real honest estimates furnished I think it would be found that my opinion is generally borne out. It is no doubt a good thing to manufacture diseases out of small manifestations, and to excite alarms through trifling causes. Just as we live in an age of medicinal quackery, so do we exist in an age of vegetable nostrums; almost everybody having one, and seeking to find money in it. To elevate these nostrums in the esteem of horticulturists has no doubt proved to be a profitable speculation. Yet every practical gardener knows that plant diseases and pests arise more from defective culture and from improper treatment than from other causes. The best cultivators are least affected by these troubles, and prevention is far cheaper and

than of some enduring trouble. There is the Onion-maggot, two years ago working great havoc amongst Onions as also did the Onion-fungus, yet this year Onions never were finer, cleaner, or better everywhere. There is the Paranip and Celery-maggot, so far scarcely seen anywhere in all my travels; and as for Tomato diseases and pests, they are extremely local, usually through very bad culture—and those suffering do not forget to very loudly complain. Peach-blisters is a disease generated by cold, but no one has for it yet found a cure or probably ever will, except by enclosing the trees with glass, and thus excluding the cold air. Phylloxera and Potato-bug are scarce. Vine-mildew is a preventable complaint; so too is shanking. They

never trouble good cultivators; and as to Thrips and red-spider, everybody knows how they are generated and how got rid of. After all, when these thousand-and-one plant diseases are overhauled do they not resemble the famous 300 cats in grandmother's garden that soon were whittled down to three. Have we not made far too much of the vegetable troubles? we have really elevated them from molehills into mountains; and when they come and are fairly faced, do they not soon become ephemeral and ghosts? Of course, some angible troubles remain. Well, what are they beyond those mentioned? It is worth finding out. Do not let us forget, for instance, that caterpillars and blights come, and they disappear, but fruit culture goes on for ever. A. D.

APPLICATION OF MANURE.—There is much injudicious application of manure to plants, especially the finer kinds of artificial manures, many cultivators being extremely anxious to obtain the best results. But by over-dosing their plants, they defeat the object in view, and often do grievous harm. I have seen far more of this kind of over-manning than is pleasant; and I met with a case in point lately, in a gentleman's garden. He is fond of gardening, and was much disheartened by the ruin of his Vines. He has had plenty of well-finished Grapes for many years past; but, having parted with his gardener, and engaged another, he expected great things from him, and the first exhibition of his talents was the destruction of the Vines (such was the conclusion I came to when I learned that he had afforded liberal applications of a first-rate, but very potent manure, to the border). On examining the soil, all the uppermost roots were seen to be dead. Another gardener was put in charge, but no improvement resulted. The remedy I advised this season was to remove the surface-soil down to the living roots, and carefully pack good turfy loam among them, making sure that the old soil and decaying roots were cleared out. If there is no improvement, a new border and Vines will then be the only satisfactory remedy. Most of the large manufacturers of manures send with the orders instructions as to the quantity of the manure which can be safely used. I could fill columns with cases of plants destroyed by manures, but with liquid-manure from the farm-yard, as well as surface-dressings of animal-manure, there is not this danger. M. T., Carron, N.B.

WINTER TOMATOS.—In reference to my note on Tomatos, page 372 of the *Gardeners' Chronicle* for June 5, Messrs. John Sharpe & Son, Bardney, Lincoln, write me that the Tomato seed I received from a neighbour under the name of Sharpe's Plentiful, was correctly named, as the seed in the first instance was obtained from them direct, and is a cross between Sutton's Perfection and Glenhurst Favourite. I can only add, that it is one of the best varieties that I have grown for setting and bringing to maturity a good crop of fruit during the winter and spring. George Woodgate, Rolleston Hall Gardens, Burton-on-Trent.

SOCIETIES.

SCOTTISH HORTICULTURAL ASSOCIATION.

JULY 19.—A meeting was held on the above date at the Society's Rooms, St. Andrew Square. Mr. Todd, the originator of this special meeting, presiding. There was a good attendance of the members, over 60 being present; and a capital muster of Strawberries, some 25 varieties shown, and there would have been a great many more, as the letters from growers in sympathy with the object of the meeting testified, but for the fact that in the south the Strawberry crop was virtually over, and the northern one scarcely ready.

The chief exhibitors were Mr. DUNN, of Dalkeith; Mr. SMITH, Oxenford Castle, Midlothian; Mr. TEMPLE, Carron House, Stirling; Mr. KIRK, Norwood, Alloa; Mr. GORRIE, Mauldrie Castle, Carlisle, Lanarkshire; Mr. MCKENZIE, of the Grove, Trinity; Mr. JAMES GRIEVE of Redbraes Nursery; and Mr. CARMICHAEL, of Pitt Street, Edinburgh. Mr. DUNN and Mr. MCKENZIE were the largest exhibitors; the first showing Alpines, Bothwell Bank, British Queen, Dr. Morère, Garibaldi, Helen Gloede, James Veitch, John Ruskin, President, Scarlet Queen, &c.

The Grove lot had good examples of Royal Sovereign, John Ruskin, Garibaldi, Competitor, Scarlet Queen, Waterloo, British Queen, Ginton Park, Lord Suffield. In the Oxenford lot were fine examples of Duke of Edinburgh, Royal Sovereign, Dr. Hogg, Elton Pine, and Garibaldi, the latter being well done by Mr. SMITH, outside and under glass. Mr. TEMPLE sent perfect examples of President and

Royal Sovereign. Mr. KIRK sent John Ruskin and Royal Sovereign. Mr. GORRIE sent President and Sir Joseph Paxton.

Mr. JAMES GRIEVE of the Redbraes, Bothwell Park, had a very promising new Strawberry, of which he holds the entire stock. It is something in the way of President and W. E. Gladstone. Mr. CARMICHAEL's seedlings being mostly crosses from Waterloo were not sufficiently ripe to show excepting Richard Gilbert, a very promising Strawberry of excellent flavour and firm flesh, in the way of Royal Sovereign. Thomas Carlyle was again shown in trusses of exceeding fertility.

The President after congratulating Mr. DUNN in the name of the Association on his receiving the Jubilee Medal of Honour of the Royal Horticultural Society, called upon him to open the discussion on Strawberries. Mr. DUNN did so in his usual practical manner, and was followed by Mr. JAMES GRIEVE, Mr. TEMPLE, Mr. D. T. FISH, Mr. CARMICHAEL, Mr. MCKENZIE, Methven & Sons, and others. The tables were beautifully decorated by the President; the chief features being a tall, large vase of the old General Jacqueminot Rose with long stalks and fine foliage, sprayed with Maidenhair Fern. Several other vases were furnished with Iceland Poppies, starred with the elegant and graceful Gypsophila, standing well out beyond the Poppies. Messrs. CROLL of Dundee, Messrs. DICKSON of Belfast, Ireland, and Mr. COMFORT, near Edinburgh, staged such exquisite Roses as to make one regret the more that no Scotch Roses were sufficiently advanced to compete with southern flowers at the Palace on July 2nd. Messrs. COCKER of Aberdeen would also have shown, but it was a general holiday on the Monday. Mr. ECKFORD sent some superb stands of select Peas from Wem, Shropshire; two rosy Pinks were specially beautiful, Lady May Currie, and Lady Muriel Hamilton, Blanche Burpee, white, and Queen Victoria, creamy white.

Mr. SCARLET, market gardener, Sevenaks, had a very useful exhibit of some six varieties of early Peas, grown without stakes, and pulled up complete and exhibited on a wall with leaves, flowers, and crop entire. They were all fit for use; Ameer and Duke of York being obviously the best for quality and produce. Time of sowing:—Feb. 6, Early Bountiful; Feb. 11, William Hurst and Chelsea Gem; Feb. 16, Duke of York; Feb. 25, Ameer. Date of showing, July 18. A useful exhibit.

ACTON HORTICULTURAL.

JULY 23.—The thirtieth annual exhibition of this Society was held in the Acton Recreation Grounds (a most suitable spot) on the above date. The show, though a small one, contained many good exhibits. A lamentable feature was the paucity of exhibits in the gardeners' classes. True, many of the places which once had large gardens attached, have been devoured by the rapacious builder, but we hear that a good many local residents who have gardens, declined for some unaccountable reason to allow their gardeners to exhibit at this show. What is really urgently wanted is the immediate amalgamation of the Ealing and Acton Horticultural Societies, a really good annual show might then be secured. There is not room in such a comparatively small district for two societies, one subscription should cover both. As it is, the forces are divided, prejudices and jealousies creep in; weakness, as a natural consequence, follows, and what is of most importance in these utilitarian days, the exchequer inevitably suffers in the matter of the all-important annual subscriptions. The non-competitive element was well represented. Specially worthy of mention were the following: Mr. G. Reynolds, gr. to the Messrs. DE ROTHSCHILD, Gunnersbury Park, sent a prettily-arranged group of Lilies, Orchids and Ferns; whilst a bowl of splendid Water-Lilies was sent by Mr. J. Hudson, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House; Mr. W. J. Simpson, gr. to C. T. SUTTON, Esq., The Beeches, East Acton, had an effective group of Dipladenias and foliage plants. Messrs. CHARLES LEE & SON, Hammersmith, sent from their Ealing Nurseries, magnificent cut Roses in the leading varieties; and Mr. F. CHANDLER had foliage and flowering plants. Good Grapes came from Mr. SIMPSON; and Tomatos from Frier's Place Nursery.

BECKENHAM HORTICULTURAL.

JULY 28.—A very pretty representative exhibition was held on the above date in the spacious recreation grounds, the subjects were nicely arranged, and the whole carried out with great spirit. In the principal tent groups arranged for effect were a leading feature and Mr. M. Webster, gr. to E. J. PRESTON, Esq., Kelsey Hall, is to be congratulated not only on winning the 1st prize with an arrangement of foliage and flowering plants, which would do credit to any exhibition, but also upon being awarded for the same the Silver-gilt Medal of the Royal Horticultural Society for high culture. All the groups were good, but overcrowding characterised some of them. Among the specimen flowering plants was an unusually fine example of *Plumbago capensis* grandly bloomed; and among foliage plants a large specimen of *Anthurium Warocqueanum*. Some good examples of Ferns were staged, and some small but admirably-grown mosses; Fuchsias finely grown and bloomed; excellent Achimenes, and fairly good Gloxinias for the late period of the year were the leading flowering subjects. Amateurs and cottagers staged good plants also.

Of cut flowers there was a limited display. Mr. WAT TAYLOR, Hampton, had some good Roses; Cactus Dahlias were creditable for the early season; and sprays of *Violas* were very pretty. The amateurs made a brave display with cut flowers.

Fruit was limited in quantity, hardy sorts were the best, one or two early Plums and late Cherries were good; bush fruits predominated. Vegetables were numerous, but little early to see them at their best, unless they are specially cultivated for the season of the year.

One tent was set apart for table and other decorations shown by ladies, and some very pretty designs were staged.

Miscellaneous exhibits were an excellent feature, especially the fine Begonias shown by Messrs. LAINO & SON and J. R. BOX, the former had Roses, and a great lot of bunches of hardy flowers. Mr. H. CANNELL and Mr. ER REID had brilliant Cannas; Mr. FOSTER of Havant, Sweet Peas; Messrs. R. PEED & SONS, one of their charming sweet plants; and there were pretty floral decorations from several local florists. On the whole it was one of the most successful exhibitions that the society has yet held.

CHESTER HORTICULTURAL FÊTE.

JULY 28, 29.—The second horticultural fete in this ancient city was held upon the above dates, on the Roodee or Race-course. This piece of ground is comparatively level, and enclosed by high banks on almost all sides, it forms a very suitable site for such an exhibition, and in the event of the management being continued with sufficient enterprise and discrimination, there would appear to be no reason why the fixture should not become a very important one indeed.

The show just held may be described, upon the whole, as satisfactory. Of course the committee, in their first effort of last year, were fortunate enough to obtain a visit from the Royal Horticultural Society, and this circumstance was sufficiently important to attract more exhibits, more visitors, and general *clat* to the event than could have been expected in the case of a new show. It is not surprising, then, that this season it has been difficult to show an improvement in regard to the number of exhibits or in the extent of the show—and, as a matter of fact, there have been fewer entries than last year; but in other respects there was much improvement noticed. In the place of the very poor tents that were used on the previous occasion, when the space was far too limited to accommodate the exhibits, there were six or seven large and excellent marquees of the best description. Indeed, the committee appear to have gone to the opposite extreme, and have provided space for an exhibition of double the extent. This resulted, as needs it must, in many unfilled stages, and if every exhibit was given room for effectual display, at the same time, the amount of vacant space suggested a meagreness of material. Chester has only to push away on sound lines, and it will obtain success. We were pleased to notice that the Horticultural Show occupied a very much larger proportion to the whole than last year, and we think some of the more objectionable side shows have been curtailed with advantage. There are attractions that may well be associated with a display of flowers, such as music, choir contests, and similar entertainments, and if these form the principal features of the temptation offered to people who do not love horticulture sufficiently well to patronise a show wholly consisting of horticultural products, there will be less cause for complaint. It would be difficult to point to anything in Wednesday's show as being a very preponderating feature, for the schedule was decidedly general in its character, and the exhibits equally varied. In the following report we speak of the principal sections and classes, and will enumerate the chief prize-winners. Beyond this there were many classes for amateurs, and two tents devoted to the produce from cottagers, the details of which, we assume, will be uninteresting to the majority of our readers.

PLANTS (OPEN).

Groups.—The centre of one of the spacious marquees was occupied with groups of plants arranged to produce effect. The principal of these was for a group upon a space of not more than 300 square feet, and the prizes in this class amounted to £55. The 1st prize was awarded to an arrangement from Mr. J. CYPHER, Cheltenham, who had one of his characteristic exhibits, in which the feature of rustic-looking arches or bridges covered with corks was unusually prominent. About 5 feet from the ground, and almost at the back, was one of these, which in shape represented half a diamond, and from this to the corners at the front ran two others considerably lower. By tasteful and skilful disposition of choice foliage and flowering plants, a very attractive picture was made. The whole of the plants showed careful selection, and were suited to the position they adorned, though few of them were of any great size. The 2nd prize exhibit, from Mrs. G. PEASE, Woodside, Darlington (gr. Mr. McIntyre), was quite as remarkable, being from an amateur. It would have been better, however, had some of the plants used been less heavy in appearance. The 3rd exhibit showed lack of experience in arrangement. There were five entries.

The 1st prize in a class for a smaller group of a similar character was won by Mrs. R. S. HUDSON, Bache Hall, Chester.

Twelve Stove and Greenhouse Plants.—The 1st prize was taken by Mr. J. CYPHER, with fine specimen plants of *Livistona chinensis*, *Kentia australis*, *K. Fosteriana*, *K. Belmoreana*, *Ixora Williamsii*, *I. salicifolia*, *Croton mortefontaineensis*, *Statiche profusa*, *Bougainvillea Cyperii*, *Erica Austiniana*, *Phenocoma prolifera* Barnesii, and *Croton*

angustifolia. The plant most deserving of comment in the collection was that of *Ixora salicifolia*, which was a magnificent specimen of one of the most distinct and pretty *Ixora*. The 2nd prize was taken by T. S. TIMMIS, Esq., Cleveley, Allerton, Liverpool, which included a good plant of *Rhododendron Taylori*, one of *Ixora coccinea superba*, and one of *Crotona*; the rest of the plants were commendable. Both of the exhibitors already mentioned were well ahead of Mr. W. VAUGHAN, 4, Somers Place, Leamington.

The class for Six Stove and Greenhouse Plants brought little that needs remark. The 1st prize was taken by W. H. WATTS, Esq., Elm Hall, Liverpool. His very large specimens of *Crotona* Queen Victoria and *Disraeli* might have been better coloured.

Caladiums were fair, but the 1st prize collection of twelve plants from T. S. TIMMIS, Esq., Cleveley, Allerton, is entitled to praise, as several of the plants were very satisfactorily coloured.

Cuscuta found but one exhibitor, which was a great pity, as the Midland people have much to learn yet regarding the beauty and capabilities of the novelties among these plants, which are likely to form important features in future shows. The only collection was one from His Grace the Duke of WESTMINSTER, Eaton Hall (gr., Mr. N. F. Barnes), and the varieties included *Florence Vaughan*, *Alphonse Bouvier*, *Queen Charlotte*, *Jules Chretien*, and *Paul Bruant*. All of these are desirable sorts, and it would have been well had labels been suspended where visitors could have easily noted them, the small wooden ones in the pots being of little use.

Crotons were not numerous in the class reserved for them, but a creditable collection of four plants obtained 1st prize for T. S. TIMMIS, Esq.; and Mr. McIntyre, gr. to Mrs. PEASE, Woodside Gardens, Darlington, was so nearly successful that it was difficult to follow the judges' award.

Ferns were very beautiful, and there were several collections of admirable plants, but that from T. S. TIMMIS, Esq., was decidedly superior, and his plants of *Davallia filix-fer*, *Nephrolepis davallioides furcata*, *N. rufescens triplinatifida*, *Microlepia birta cristata*, and two specimens of *Adiantum cuneatum* left little to be desired. W. H. WATTS, Esq., Elm Hall, Liverpool, is deserving of mention for having staged a very creditable collection, which took 2nd honours.

The best specimen Fern was one of *Adiantum gracillimum*, from Mrs. LOGAN, Upton Lawn, Chester.

The best single specimen greenhouse plant was *Phenocoma prolifera* Barnesii, from Mr. H. CYPHER; and the best specimen stove-plant, *Ixora Fraseri*, from Mr. WM. VAUGHAN, Leamington.

Dracenas call for little comment. The 1st prize for six plants was taken by T. S. TIMMIS, Esq., with moderately good specimens.

Cleus.—Plants were shown in several collections, most of them having been trained as pyramids. Noteworthy specimens about 4 or 5 feet high, excellently trained and of good colour, obtained 1st honours for CHARLES TRELFALL, Esq., Tiltstone Lodge, Tarporley.

Asimenes and *Glorinias* were not so good or numerous as could have been wished.

Six *Crotons*, prizes offered by Messrs. R. Ker & Sons, Liverpool.—This was a well-contested class. The 1st prize was taken by T. S. TIMMIS, Esq., and the 2nd by the Duke of WESTMINSTER.

Table Plants were shown in most praiseworthy manner, the competition being very keen and numerous. The 1st prize for twenty-four plants was won by Sir G. A. MEYRIK, Bart., Bodorgan, Anglesea; and the 2nd by T. S. TIMMIS, Esq. The best collection of six plants, for which Messrs. Sankey & Son, Nottingham, offered a prize, was well won by T. S. TIMMIS, Esq.

CUT FLOWERS.

Roses.—The successful exhibitors of a collection of forty-eight cut blooms, distinct, were Messrs. HARKNESS & SONS, Bedale, Yorks; Messrs. ALEX. DICKSON & SONS, Newtownards, Ireland; and Messrs. D. & W. CROLL, Dundee. The blooms from the 1st prize exhibit of Messrs. Harkness & Sons were capital, and equal in some instances to those common at shows in the London districts three weeks ago. In the varieties shown we noticed none but well-known exhibition sorts, and it would serve no purpose to enumerate them. Messrs. Dicksons' Roses were perhaps a trifle better in colour, but they had not the size and substance notable in the collection from Bedale. There were four competitors in this class.

Messrs. PERKINS & SONS, Coventry, won the class for twenty-four blooms, but the competition was weak, and very poor in this instance.

Excellent quality, however, was present in the class for twelve blooms, and Mr. HUGH DICKSON, Belfast, and Messrs. HARKNESS & SONS were 2nd and 3rd respectively with very fine blooms.

The Tea Roses were beautiful in some instances, but many were marked badly by rain or wind. Messrs. A. DICKSON & SONS beat Messrs. D. & W. CROLL of Dundee, in the class for twenty-four blooms, distinct; and Messrs. HARKNESS & SONS very easily won for a collection of twelve blooms.

Display of Cut Flowers.—This was to be arranged in any design or combination of designs at the discretion of the exhibitor in a space 12 by 5 feet. The 1st prize was £10, and £15 besides was given in three other prizes. There was but one exhibit, and this was of a very unsatisfactory stiff character, quite contrary to one might have been expected.

A brilliant display was made by the class for a collection of *Cuscuta* and *Pioteetes* in variety, arranged with natural

foliage on a space 10 feet by 4 feet. There being upwards of half a dozen exhibits, the number of blooms used was considerable. A variety of stands was used by the different exhibitors, some of them of the advertised ornamental character.

The 1st prize was awarded to MARTIN R. SMITH, Esq., Hayes, Kent (gr., Mr. Blick), and his name is sufficient to indicate that the variety and quality of the flowers used could scarcely have been improved upon. These were shown in glass bottles upon white tissue. The 2nd prize was taken by Mr. W. WATSON, Clontarf Nurseries, co. Dublin; and the 3rd by Messrs. THOMSON & Co., Birmingham.

Flowers arranged in vases or stands were a source of much attraction, considerable taste having been displayed in the arrangements. Messrs. JONES & SONS, Shrewsbury, pleased the judges best, by an arrangement in a small basket upon legs with a high bent handle over-top. Many of the exhibits, in addition to the prize-winners, were beautiful, however, including one composed entirely of pink-flowered Sweet Peas and *Asparagus* foliage.

Messrs. PERKINS & SONS, Coventry, who had much the best ball and bridal bouquets, met with less competition than they frequently encounter.

Carnations were shown as exhibition blooms also, the best collection of twelve blooms being staged by J. W. FROULKES, Esq., Old Northgate House, Chester; Mr. A. R. BROWN of Birmingham, being 2nd. There was considerable competition, and the flowers were fairly good.

Messrs. THOMSON & Co., of Birmingham, won for twelve *Pioteetes*; and MARTIN R. SMITH, Esq., for "twelve *Carnations* and *Pioteetes*, yellow grounds, fancies or self, distinct."

NURSERYMEN'S CLASSES.

Messrs. PERKINS & SONS, Coventry, won a class for cut Roses, the 1st prize for which was £5. There were two other collections, but much more might have been expected from the value of the prizes offered.

A collection of hardy flowers in variety, on a space 15 feet by 4 feet, won 1st prize for Mr. W. F. GUNN, Olton, Birmingham. The variety and quality of the flowers shown, well merited the award gained. Messrs. HARKNESS & SONS took 2nd prize.

A decorative display of cut Dahlias upon a space of 10 feet by 4 feet was best shown by Messrs. JONES & SONS, Shrewsbury, whose display was very satisfactory; Mr. M. CAMPBELL, Blantyre, was 2nd.

FRUIT.

Upon the whole, it was satisfactory. There were several exhibits in the class for a display of ripe fruits, and these were arranged upon tables screened off from the public. The 1st prize was obtained by the Earl of HARRINGTON, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre). In the centre of the table was a mirror, and on this two stands furnished very effectively with cut flowers of *Maderallias*, and a smaller one with *Cattleyas*. The fruit was of excellent quality, and was placed around the central ornament. Of the fruit, we noticed excellent Beauty of Bath Apple, Elton Pine Strawberry, Nobleman Peach, Countess Melon, Pine-apple Nectarine, Muscat of Alexandria Grapes, also Figs, Peaches, Apricots, and Melons. Out of a possible one hundred points, the 1st prize exhibit was awarded seventy, twenty of these being for effective arrangement. The 2nd prize was awarded to Sir J. W. PEASE, Hutton Hall, Guisborough (gr., Mr. J. McIndoe), whose exhibit received sixty-seven points, obtaining six fewer than the preceding one for effect in arrangement. The Earl of CARNARVON, Brethby Park, Burton-on-Trent (gr., Mr. Ready), was 3rd, with fifty-three points.

The best collection of ten dishes of ripe fruit was shown by Lady H. SOMERSET, Easton Gardens, Ledbury (gr., Mr. Harris). It contained Stanwick and Elrige Nectarines, Bigarreau Napoleon Cherries, Stirling Castle and Bellegarde Peaches, two Melons, Black Hamburg and Muscat of Alexandria Grapes, and Brown Turkey Figs. 2nd, Lord BACOT, Blithfield Hall, Rugby (gr., Mr. Bannerman), with a collection including very fine Peaches, Figs, and Grapes. Mr. JNO. EDMUNDS, Bestwood Gardens, Arnold, was 3rd.

The best Pine-apple was a good specimen from Lady H. SOMERSET. The best collection of eight dishes of hardy fruit was also shown by Lady H. SOMERSET, who had Raspberries, Cherries, Red Currants, Apricots, Strawberries, and Morello Cherries. 2nd, Viscount COMBERMERRE, Combermere Abbey, Whitechurch.

Grapes.—The best collection of six bunches was from Mr. W. PRITCHARD, Dee View, Little Neston. The varieties were Muscat of Alexandria, Bowood Muscat, and Black Alicante. The Earl of HARRINGTON was 2nd, but his Muscats were unripe.

The best three bunches of Black Hamburg Grapes were from R. T. RICHARDSON, Esq., and Lady H. SOMERSET had the best Madresfield Court Grapes. There were a few other Grape classes, and Peaches, Nectarines, Cherries, Figs, Tomatoes, and Melons were well shown in numerous instances. Apricots, Apples, and Pears were few.

VEGETABLES.

There were about a score of classes devoted to vegetables, several of these being for collections. Generally, the exhibits were good, and the collections especially good.

The best collection of twelve kinds was shown by Lady THEODORA GUNZ, Inwood House, Henstridge. The Cucumbers, Cauliflowers, Leeks, Potatoes, Onions, Carrots, Beans, Beet, and Tomatoes, were of splendid quality; the 3rd prize was taken by M. S. WILLIAMS, Esq., Aberperry, Glyn, Neath; 3rd, the Earl of CARNARVON, Highclere Castle (gr., Mr. W. Pope).

The best collection of eight kinds was shown by the oil.

Mrs. E. KENYON, Maseham Hall, Whitechurch; and Captain FIELDEN, Mollington Hall, Chester, was 2nd.

The single-dish classes were generally well filled.

NON-COMPETITIVE EXHIBITS.

The firm of Messrs. DICKSONS, Ltd., Chester, filled a whole tent with a very varied collection of plants. There were groups of *Cannas*, *Carnations*, *Hydrangeas*, bouquets, *Ferns*, *Dracenas*, *Cycads*, *Tree Ferns*, *Roses* in great variety, flowers, *Begonias*, *Liliums*, cut flowers of *Roses*, hardy *Fo-Vines*, and many other plants. Vegetables were also shown by the firm, including a collection of 150 distinct varieties of Potatoes. The whole collection was a show in itself, and was deservedly awarded a Gold Medal.

At the entrance to one of the largest tents was one of the very best groups of Malmesdon *Carnations* ever seen in the Midlands. It was from the gardens of his Grace the Duke of WESTMINSTER, and was deservedly awarded a Gold Medal. The group was very extensive, and contained a very large number of rather small plants, which carried from one to upwards of twenty blooms.

Messrs. ECKFORD'S Sweet Peas were beautiful, and represented his newer and best varieties. Messrs. W. & J. BARKENHEAD contributed a splendid collection of *Ferns*, for which they are justly celebrated.

Messrs. WALLACE & Co., Colchester, made an excellent display of Cut *Lilies*, *Calochortus*, *Carnations*, *Montbretias*, &c. Messrs. CALDWELL & SONS, Knutsford, Cheshire, exhibited hardy herbaceous flowers and *Rose* blooms. Mr. H. BROWNELL had a display of *Dahlia* blooms, cut flowers of *Tuberous Begonia*, and a number of cut flowers of summer-flowering *Chrysanthemums* and other plants, also pods and haulm of a good cropping Marrowfat Pea named Rent Payer, haulm about two or two-and-a-half feet high. A grand display of *Roses* in considerable variety was made by Mr. E. MURRAY, Portland Nurseries, Shrewsbury.

Messrs. WEBB & SONS, Stourbridge, had cut flowers of hardy herbaceous plants. Messrs. R. HARTLAND & SON, The Lough Nurseries, Cork, exhibited cut blooms of *tuberous Begonias* in much variety, large, and commendable. A collection of *Tea* and *Noisette* *Roses* in pots was shown by Messrs. J. COWAN & Co., Ltd., Garston, Liverpool. An exquisite exhibit of flowers of summer-blooming *Chrysanthemums*, *Carnations*, *Panicles*, &c., was made by Mr. M. CAMPBELL, nurseryman, High Blantyre. Messrs. PERKINS & SONS, Coventry, had florists' exhibits. Messrs. McHATTIE & Co., Grosvenor Nurseries, Chester, had a few *Conifers*, and a group of miscellaneous plants.

NEWPORT HORTICULTURAL.

JULY 29.—The Second Annual Flower Show of this improving Monmouthshire Society was held on the above date in the King's Hill Field, the exhibits, on the whole, being a decided improvement on last year's show; the weather was everything that could be desired, and the attendance was good, which was very gratifying to the energetic Secretary (Mr. J. G. Ellis) and the Committee.

Mr. J. LOCKYER, gr. to J. C. HANBURY, Esq., J.P., Pontypool Park, was 1st for six distinct kinds of Stove and Greenhouse plants, his *Stephanotis floribunda* and *Ixora Williamsii* being the best. For six distinct Ornamental Foliage plants Mr. J. MADDOX, gr. to Col. WILLIAMS, J.P., Brynllais, Newport, Mon., was 1st. The best six Exotic Ferns came from Mr. J. LOCKYER, and Mr. J. MADDOX had the best group of miscellaneous plants.

Hybrid perpetual Roses, twenty-four distinct varieties, were best from Mr. RALPH CROSSLING, Penarth Nurseries; and Mr. STEPHEN TRESSEDER, Penarth Nurseries, Cardiff, twelve distinct varieties of *Teas*. Both competitors staged some excellent blooms, and Mr. Treseder was awarded a Certificate of Merit for his new Rose, Mrs. Stephen Treseder.

Carnations and *Pioteetes*, each twelve blooms, distinct, were well shown by Mr. WILLIAM TRESSEDER, The Nurseries, Cardiff, who was 1st. These were a clean lot of blooms, and a seedling, Mrs. W. Treseder (fine dark self), was awarded a Certificate of Merit.

Mr. J. LOCKYER was 1st for twelve bunches of cut blooms, distinct, the flowers shown including very fine *Anthurium Scherzerianum*, *Cattleya gigas*, *Gaskelliana*, and *Gloriosa superba*. The best twenty-four varieties of show and fancy Dahlias came from Mr. TRESSEDER, also the best twelve bunches of *Cactus* varieties. Mr. JOHN BASHAM was 1st for twelve bunches of *Pompon* varieties.

Mr. JOHN BASHAM, Fairbank Nurseries, Basaleg, Mon., staged a fine collection of Apple-trees in pots, and miscellaneous plants, and was awarded a Certificate of Merit.

Mr. BIRT, florist, Newport, Mon., made an excellent display of bee appliances, horticultural sundries, plants, &c.

In the Amateur Section, Mr. D. POWELL, gr. to Colonel WALLIS, J.P., Newport, was 1st for four distinct stove and greenhouse plants; and Mr. J. LOCKYER was 1st for a specimen plant, a well-flowered *Clerodendron Balfourianum*. Dr. C. B. GRATTE, Newport, had the best group of miscellaneous plants.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JULY 29.—There was a large number of Orchids on the tables of the Coal Exchange on the above date. It is striking to observe how the interest in this venture is increasing, and now that the Committee has decided to strike and award medals of three classes, bronze, silver, and gold.

noteworthy groups, there will be no lack of subjects brought before it.

WM. THOMPSON, Esq., Walton Orange (gr., Mr. W. Stevens), brought *Odontoglossum Schröderianum* (Award of Merit), with a branching raceme of well-coloured flowers; *Epidendrum vitellinum majus* (Award of Merit); this was of much brilliancy, making the ordinary variety throughout the hall pale in comparison. *Dendrobium longicornis majus*, a splendid plant with five score of whitish blooms on it, but so much nodding as to suggest a plant suffering from lack of water, this obtained a Cultural Certificate; *Odontoglossum Pescatorei*, a very large and perfectly-formed concolored flower, which also obtained a Cultural Certificate.

WM. BOLTON, Esq., Otterspool, submitted a plant of *Oncidium Lanceanum* covered with good flowers (Cultural Certificate), and another one of darker cast of colour (Award of Merit).

Captain SCHOFIELD (gr., Mr. Schill), showed an excellent *Cypripedium Masalanum* (*Rothschildianum* x *supericillare*) (First-Class Certificate). This is a decided novelty, in which the two parents mixture is clearly observable; the segments are of yellowish-green ground, the spotting decided, and of a rich chestnut colour, elongated like the seed parent, with the pouch of the pollen parent; one of the prettiest things ever submitted from a novelty point of view before this Committee.

A. WARBURTON, Esq., Vine House, Haslingden, put up a wonderfully fine example of *Cattleya Hardyana* = *aurea* x *gigas* (First-class Certificate), a very fine variety. Phalax Humboldtii shown by this gentleman is likewise an acquisition (Award of Merit), the density of the spikes and the faintness of the colouring attracting much attention.

THOMAS STATTER, Esq., Stand Hall (Mr. R. Johnson, gr.), had among other fine plants *Cattleya Rex*, with four flowers (Award of Merit). This is a new departure in respect of being neither bluish nor white, but having a lemon shade over its limbs, with a florid dashed lip; also *Laelio-Cattleya Amesiae* (Award of Merit). This is after the way of *Laelio-Cattleya exoniensis*, but with a larger and more ovate lip—an exquisite hybrid between *L. crispata* superba and, we presume, *L. laevis purpurata*.

E. J. SIDENOTHAM, Esq., Eriadene, Bowdon (Mr. Shiner, gr.), carried off the only other First-class Certificate awarded with *Dendrobium speciosissimum*. This is a charming novelty of the negro-hirsute section that beats not only that section but all other white Dendrobies that have come under our notice; the pearly whiteness of the segments, and even of the lip, with the exception of a single undefined lemon blotch on the upper half of this limb, is conspicuous; and then the substance is like ivory to the touch. This is an excellent gain in species, and should be in every collection. He also exhibited *Cattleya speciosissima* (First-class Certificate). This plant was in grand health, but the flowers were better last season.

S. GRATRIX, Whalley Range (gr., Mr. D. McLeod), put up one of the prettiest forms of a pale flushed *Cattleya Gaskelliana* called 'Fairy Queen' (Award of Merit). The flowers were a little tarnished, but there was no mistaking the variety with the beautiful cerise spot placed right in the centre of the lip. He also exhibited *Cypripedium* x *Monica* = *Roebelini* x *barbatum* Warneri; the colouring disc and the form were notable, the fine arching petals showing the undulating outline of Warner's *barbatum*; an excellent seed parent.

EDWARD S. CLARK, Esq., Wrexham (gr., Mr. J. Edwards), had a Cultural Certificate for *Oncidium Lanceanum*; he had also a fine flowered white with orange blotch on the lip of *Dendrobium Bensonii*, full of flowers, and also a good form of *Laelio-Cattleya Arnoldiana*.

W. A. GENT, Esq., Brooklands, had a Cultural Certificate for a piece of *Cypripedium Parishi*. H. GREENWOOD, Esq., had a good piece of *Cypripedium urantherum superbum* (Award of Merit); and the same award was given to a splendid large form of *Dendrobium Phalaenopsis Schilleriana*.

WM. POLTON, Esq., Widderspool, had Award of Merit for a pretty variety of *Cattleya Schilleriana*, also for a fine piece of the white lipped with straw coloured segments of *Sobralia leucorhiza* shown by JOHN LEMAN, Esq., Ashton-on-Mersey.

A Silver Medal was awarded to E. SHORLAND BALD, Esq. (Mr. A. Hay, gr.), Vice-President, for a select and showy lot of about two dozen plants, comprising *Dendrobium Phalaenopsis Schillerianum* (Award of Merit), a fine *Cypripedium Curtisii*, a fine stiff crowned *Dendrobium Dearei*—specimen of the best, a fine *Masdevallia Veitchii*, &c.

WM. COWAN, Esq., Otterspool, was also awarded a Silver Medal for a large group. The *Cattleya Schilleriana* were valued in tints, and all of them were well cultivated. *Cattleya Harrisoni*, a nice flower, the pretty *Dendrobium Johnsonianum*, an albino; *Cattleyas* in variety, comprising *Supra Aurea* and *Warszewiczii*, and some of the better class of cut flowers.

SOUTHAMPTON HORTICULTURAL.

JULY 31 & AUGUST 2.—The summer show was held on the Common, by kind permission of the Town Council.

Plants were the chief feature. For eight store and greenhouse specimens, half of which were to be in flower, there were two competitors—Mr. F. WILLS, nurseryman, Shirley, Southampton; and Mr. W. PEEL, gr. to Miss Todd, Siltborough Lodge, Shirley. So close were the two collections in point of merit that they were awarded prizes of equal value.

Mr. WILLS had the best specimen plants in flower, viz., *Allamanda grandiflora* and *Bougainvillea glabra*, while he was beaten by Mr. PEEL in foliage plants, his *Cycas circinalis* being a very fine one.

In the class for six specimens there was keen competition, and Mr. T. OSMAN, gr. to Mrs. HAALFROOT, Bittern, took the 1st prize; Mr. AMY, gr. to the Hon. Mrs. ELLIOTT YORK, Hamble Cliffe, being a good 2nd.

Groups of miscellaneous plants arranged for effect were bright and effective, but nothing new in arrangement or the use of material was observed. Two classes were provided, one for 150 square feet, and a smaller area.

Prizes were offered for Ferns, Pelargoniums, Fuchsias, Begonias single specimen foliage, and flowering plants, and in all these competitions there was spirited rivalry, and the plants were of a very creditable character.

FRUIT was plentiful, and of good quality. Mr. INGLESFIELD, gr. to Sir J. KELK, Bart., Tedworth, Marlborough, was 1st for six kinds; and Mr. HENBEST, gr. to A. KENNARD, Esq., Orasley, Winchester, was 2nd.

Grapes made a good show, and the best three bunches of Black Hamburg were those of Mr. MITCHELL, gr. to J. WILLIS FLAMING, Esq., Chilworth, the bunches averaging 4 lb. each, and with such he easily took the 1st prize; Mr. G. NEWMAN, gr. to Captain GANSEN, Twyford Lodge, Winchester, being a very worthy 2nd.

Mr. MITCHELL was 1st for three bunches of any variety, with fine examples of Madrasfield Court; and Mr. W. CHEATOR, gr. to Sir W. PINK, Shrover Hall, Coatham, was 2nd, with finished bunches of the same variety.

Muscat of Alexandria, for which there was a special class, was well shown by Mr. INGLESFIELD, and any other white Grape by Mr. G. Hall, gr. to Lady ASHBURTON, Melchet Court, who showed fine Foster's Seedling; Mr. CHEATOR, with Buckland Sweetwater, coming next.

Peaches, Nectarines, Melons, and bush-fruit were of good size, and excellent in quality.

VEGETABLES were in abundance, Mr. T. WILKINS, gr. to Lady THEODORE GUMER, Inwood House, Blandford, taking the chief prize.

ST. NEOTS HORTICULTURAL.

AUGUST 2.—One of the best exhibitions this Society has held took place on the above date in the grounds of Priory Park, the residence of E. Fyfe Rowley, Esq. The day was gloriously fine, and the attendance large.

Specimen plants were much better than in previous years. Mr. G. REDMAN, gr. to Miss GOODPAIN, Eynesford, taking 1st prize with six, the leading ones being *Bougainvillea glabra*, *Clerodendrum Balfourianum*, and *Allamanda grandiflora*. The best specimen flowering plant was a fine *Anthurium Scherzerianum* with about 50 spathes, from Mr. T. LOCKIE, gr. to A. J. THORNTON, Esq., Diddington Hall. Mr. REDMAN came 2nd with an excellent piece of *Statice profusa*. The best specimen foliaged plant was a fine piece of *Dracaena Lindenii* from Mr. T. LOCKIE; Mr. REDMAN taking the 2nd prize with *Croton Welshmanii*.

The best group arranged for effect was set up by Mr. REDMAN; it was composed of bright foliaged plants such as *Caladium*, *Crotons*, &c., with a few choice flowering plants. Conspicuous was a good specimen of *Stanhopea grandiflora*, freely bloomed; the 2nd prize went to Mr. FITCHLEY, gr. to A. W. ATKINSON, Esq. Finely grown and flowered pyramidal *Fuchsias* were shown by Messrs. LOCKIE and REDMAN, the prizes being awarded in the order of their names; they were a great improvement upon anything we have seen at St. Neots for some years past. Some excellent zonal *Pelargoniums* finely grown and bloomed came from Mr. T. LOCKIE, Mr. REDMAN, taking the 2nd place. Tuberous-rooted *Begonias* were also a good feature. The best four Ferns came from Mr. REDMAN, and included a fine specimen of the Staghorn type; Mr. W. LEST, gr. to J. DAY, Esq., was a close 2nd. Some very good variegated *Pelargoniums* came from two exhibitors.

Fruit was somewhat sparingly represented; the best eight dishes was set up by Mr. R. Clarke, gr. to Capt. W. H. O. DUNCOMBE; he had white Muscat Grapes, Peaches, Nectarines, Apricots, Melons, &c. Mr. T. Stone, gr. to R. A. COCHRANE, Esq., was 2nd. Peaches, Nectarines, Apricots, Plums, Apples, Pears, &c., were also shown as single dishes.

Vegetables.—Some remarkably good vegetables were staged, and the prizes offered by Mr. C. BEASON for nine varieties brought a very fine collection from Mr. T. LOCKIE. Mr. MYERS, gr. to the Earl of SANDWICH, Hinchbrook, was a good 2nd. Mr. LOCKIE took the 1st prize with a perfect brace of his Royal Windsor Cucumber. Mr. MYERS had the best collection of six dishes of Potatoes, and very excellent samples they were; Mr. T. BIGGS of St. Ives was 2nd. The many other classes for Vegetables contained very good exhibits indeed.

Miscellaneous.—A very fine group of Crozy's new dwarf Cannas was shown by Messrs. WOOD & INGRAM, Huntingdon, which was highly commended; and they also had bunches of some of Mr. Martin R. Smith's and other new Carnations.

FLOWER SHOW AT THE ABBEY PARK, LEICESTER.

AUGUST 3, 4. This was the Society's Twelfth Annual Flower Show, and it can be truly said that it grows in importance as the years pass. Several large tents were

required to take the exhibits, and they were generously filled, despite the fact that some intending exhibitors that they could not exhibit. The Mayor and I attended soon after noon and declared the show and during the day there was a great throng of visitors. Miscellaneous exhibits, as usual, contributed greatly to the beauty of the show.

PLANTS.

Never a strong point at Leicester, were shown in collections of six specimens each; and that of Mr. BLAIR, gr. to P. H. MURTY, Esq., was 1st, two well-coloured *Bougainvilleas* *Sanderiana*, *Allamanda*, *Williami*, &c.; best; Mr. C. J. MAX, Floral Depot, Nottingham, was 2nd. Mr. MAX had also the best 6 specimens of *Exotic* Ferns he was the only exhibitor.

Tuberous-rooted *Begonias*, double and single, were fairly good. There were some good bushes of some *Fuchsias* of fair size; and very good zonal *Pelarg.* from Mr. H. ROGERS, Florist, Belgrave, Leicester; J. PERKINS, of the same address, being 2nd. The finely grown and bloomed.

The groups arranged for effect were superb, so space of 150 superficial feet, and they were arranged the centre of a large tent, and could be therefore seen from two sides. Mr. C. J. MAX had an elaborate and 1 arrangement, the central plant being a fine *Kentia* *F.* ana, round about which were showy *Crotons* and foliage plants; the flowering plants, consisting of, others, *Campanula isophylla* alba, doing lowly but service. The groups were of a character which now much favour in the Midlands—i.e., they were square in and each plant is so placed that it is seen from all sides. H. ROGERS, Gipsy Lane, Leicester, was 2nd, also a elaborate group similarly arranged to the preceding brilliancy of some of the *Crotons* he employed was striking.

CUT FLOWERS (OPEN).

These are always a leading feature at Leicester, and Rose classes the northern growers carried the away best 36 blooms came from Messrs. HARKNESS & SON, 1 bright red Roses predominating. Messrs. DICKSON & NEWTON, Belfast, was 2nd, and Messrs. D. & W. DUNDEE, 3rd.

Messrs. COCKEN had the best 12 Teas and Noisettes stand containing some beautiful blooms; and the towards firm was 2nd. The best 12 of any one variety A. K. WILLIAMS, from Messrs. D. & W. CHOLL, closely; Her Majesty, from Messrs. COCKEN.

The best 12 Teas of any one variety were Maman C from Messrs. HARKNESS & SON; Messrs. D. & W. CHOLL were with Madame Cusin.

The best Rose in the show was a superb bloom of Majesty, shown by Messrs. DICKSON & SON, in their 36

Amateurs Division.—Here the leading prize-winner was Rev. J. H. PENNERTON, Havering-atte-Bow, who had very good blooms for a grower so far South. Teas better shown by amateurs and gardeners than the varieties.

Car.ations are always a good feature at Leicester, the 12 blooms bizzards and flakes came from Messrs. TUCKER, of Birmingham; Mr. R. MAKEPEACE, of Leicester, good local grower, being 2nd.

Messrs. THOMSON & CO., had the best 12 Picotees; M. G. OWEN, Kings Heath, was 2nd. Messrs. THOMSON also had the best 12 fancies or yellows; Mr. MAX again 2nd.

Hardy Perennials.—Another fine feature in the cut classes was that for twelve bunches of hardy perennials. Messrs. COCKEN & SON were placed 1st, having had striking examples; chief among them were early flow *Gladioli*, *Alstromerias*, *Scabiosa caucasica*, *Lilium* *H.* *Chrysanthemum maximum* Mr. Head (a very fine form) 2nd, Messrs. HARKNESS & SON, who had *Tigrida* *pau* very striking feature), the scarlet *Chelone barbata*, some hybrid *Gladioli* *Hollanthus*, *Phloxes*, &c.; 3rd, Mr. I. GUNN, Nottingham.

The hardy annuals, shown in bunches of twelve, were attractive also. The best came from Mr. GUNN; chief among them were such fine annual *Lupinus* as *Martwegii* and *C. shankal*, *Eschscholzia*, *Rose*, *Cardinal* and *Mandarin* (very fine), *Larkspur*, *Sweetpeas*, *Yellow Sweet Sultan* Mr. G. GARRAWAY, of Bath, was 2nd with smaller but representative of very useful varieties.

Bunches of Store and Greenhouse Cut Flowers were attractive also. Mr. W. J. EMPSON, gr. to Mrs. WILSON, Amptill House, Beds, was 1st, having had bunches of a brilliant *Nerine*, *Eucharis*, *Amazonia*, *Allan* *Bougainvillea*, some choice *Orchids*. Mr. C. J. MAX was

Fancy *Pansies* were shown in two classes, the best of which were very good for the season, came from J. L. I. Esq., Humberstone, and he was also 1st with twelve bunches of *Violas* arranged in sprays.

FRUIT AND VEGETABLES.

These exhibits were extensively and finely shown. Leading class was for 8 dishes, the 1st prize going to Edmonds, gr. to the Duke of St. ALBANS, Beaulieu, A. Notts, who had a very fine Queen Pine, which, with M. field Court and Muscat of Alexandria Grapes, Royal G Peaches, and Lord Napier Nectarines, formed leading dishes; Mr. J. H. GOODCARE, gr. to the E. HARRINGTON, Elvaston, Derby, was 2nd, with finely cut Muscat Hamburg and Muscat of Alexandria Grapes, garde Peaches, Pine Apple Nectarines, &c.

There were several collections of four dishes, Mr. A. Chandler, gr. to Mr. JAMES, Acton House, Rugby, took the 1st prize with excellent Muscat of Alexandria Grapes, Buntington Peaches, Pine Apple Nectarines, and others. Mr. Goodacre came in a close 2nd.

There was a class for four bunches of Grapes, Mr. McCullish, gr. to W. T. Wren, Esq., Newstead Abbey, was placed 1st, with very good examples of Madresfield Court, Gros Maroc, and Muscat Hamburgh, and Muscat of Alexandria; Mr. Goodacre was 2nd, having Foster's Seedling, Muscat of Alexandria, Gros Maroc, and Black Hamburgh.

Mr. A. Hampshire, gr. to Mrs. W. P. HARRISON, Beau Manor, Loughborough, staged a very good Charlotte Rothschild Pine which gained the 1st prize; Mr. READ, The Gardens, Bretby Park, coming 2nd with a Small Queen.

The best two bunches of Black Hamburgh Grapes came from Mr. McVINTISH, The Gardens, Lookington Hall; Mr. Goodacre was placed 2nd.

With two bunches of White Muscat of Alexandria, Mr. McVINTISH was also 1st; and Mr. R. SHAW, The Gardens, Garrendon Park, was 2nd.

Any other Black was represented by two fine bunches of Madresfield Court from Mr. F. H. BRAINE, gr. to R. DARTS, Esq., Melton Mowbray; and Mr. READ was 2nd with the same.

The best two bunches of any other white Muscat but that of Alexandria, was Cannon Hall from Mr. A. J. ELPHINSTONE, gr. to E. PARRIS, Esq., Sherwood; 2nd, Mr. READ with Foster's Seedling.

Other fruits consisted of Peaches and Nectarines, both well shown, Melons, Cherries, Figs, Gooseberries, &c., and in the class for Tomatoes, some very fine fruit were staged.

The special prizes for Vegetables offered by Messrs. BUTTOS & SONS, Reading; HARRISON & SONS, Leicester; C. WARNER, of Leicester, and others, brought a very fine display, as did also the liberal prizes for twelve distinct varieties offered by the Society. But the tent filled so quickly, and seemed to be such a prominent object of interest, that any attempt to get near the leading collections was practically impossible, so that no details can be set down.

Miscellaneous Exhibits greatly added to the variety of the Exhibition. Messrs. JOHN LAING & SONS, Forest Hill, sent from the Stanstead Nurseries a magnificent group of Caladiums arranged with foliaged plants which included such fine varieties as Alexander III., Gartner-directeur Geraud Roi de Janeiro, Excellent, La Duchesse, Mrs. Harry Veltch, Compeva, La main rouge, Rose Laing, Golden Queen, &c.

Messrs. DOBBIE & CO., Bothessay and Orpington, had a very large and varied collection of cut flowers: Violas, Dahlias, Pelargoniums, Pansies, Sweet Peas, &c., which was an object of interest to the visitors; Mr. JOHN FORBES, Florist, Hawick, had hardy flowers, and a large number of blooms representing all the types of the Carnation. Mr. B. R. DAVIS, Nurseryman, Yeovil, had a superb collection of Begonias, plants, and cut flowers; Messrs. W. CLIBBON & SONS, Oldfield Nurseries, Altrincham, had bunches of hardy flowers: Carnations, Pinks, Sweet Peas, Violas, Begonias, &c. Mr. E. ECKFORD, seed grower, Wem, had a collection of fifty bunches of Sweet Peas, including the fine new varieties Sadie Burpee (a fine pure white), Lady Grisell Hamilton, Colonel, Lady Mary Currie, and Prince of Wales, all set up in his usual excellent style. Messrs. W. & J. BROWN, nurserymen, Stamford, had a large and varied collection of small coniferous plants in pots, quite a unique exhibit. Mr. GOODACRE brought from Elvaston Castle Gardens a large group of Malmison Carnations, finely bloomed. Messrs. R. EDWARDS & SON, Sherwood, had a table of small Ferns in great variety; and there were also some tables of floral decorations of varied characters.

NURSERY NOTES.

ZONALS, ETC., AT THE HOME OF FLOWERS, SWANLEY.

A BEAUTIFUL show of these plants in almost every known variety is to be found at the present time at this nursery. The plants were struck in the autumn of last year, and possessed from four to six main shoots; and as the old wood increases in amount they will continue to flower, after being top-dressed in some cases, and repotted in others. The plants carry large heads of closely-set flowers of generally good substance and regular outline. An orange-scarlet coloured variety of superlative merit is Eleanor, a fine truss and flower; A. F. Wotton is salmony-red, and Camiope is another of this shade of colour; Phillis is a rosy-scarlet, with very large pip and truss; Lord Aberdeen is a beautiful scarlet coloured variety of great beauty; Madame Bruant has rosy-red suffusion on a white ground, deeper at the edges—a closely-set truss; Valkyrie has a light-red centre, running off to a flesh-tint at the margin—a very pretty flower; Snowdrop is a fine white flower, of good substance and truss; Delicate is a rosy-lilac, a pretty tint, the truss of moderate dimensions, desirable for its colour; Blue Beard is purplish-crimson, of a rich shade, and

Pink Domino has blooms of a rich pink colour, and a very fine truss; Golden Horn is an orange-scarlet, and is the nearest approach to a yellow colour that the cross-breeders have as yet obtained; Belle Alliance is a white flower with minute rosy-crimson spotting round about the central portion of the bloom; Iris is an immense truss of a rosy-crimson colour, a striking flower; Duchess of Marlborough is a flesh-coloured bloom, deeper in tint towards the centre; M. Calvat is of a deep scarlet colour, a very fine truss and bloom, which latter has a white eye; Dr. MacDonald is a bloom of deep scarlet tint, without any eye, a very fine thing; Gloire Lyonnaise is one of the largest trussed zonals, a brilliant scarlet; Kitty is similar to the last, but possesses an eye; the truss is very large, as are also the individual pips.

A span-roofed house was filled with double-flowered Zonals, which we made notes of: Madame Charlotte, a rosy-pink, one of the best of this tint; double H. Jacoby, identical in colour with the single-flowered old favourite; Jeanne d'Arc, like Belle Alliance, but spotted, a neat close truss; Rosa Bonheur, a rosy-pink truss of large size; Lady Candahar is the best of those of an orange-scarlet hue, neat in truss, and the pipe of fair size; Le Donon is white with a violet tinge, a very double flower, and the truss is of good size; Duc de Mortmart has purplish-crimson flowers and a fine large truss; M. Alphonse Ricard is an orange-scarlet, fine and good, but what would be called semi-double; Joyful is pink, with flesh-coloured margin, a close and good truss; Beauté Poitvin, with semi-double flowers of a salmony-red—very nice; Le Comteable is of a deep pink colour, a neat flower, and very closely-set truss; Raspail Improved is one of the best of the scarlet varieties.

We remarked many of the foregoing doing well in the open ground, in spite of lack of water and the great heat. Ivy-leaved Pelargoniums were making a fine display alongside of these, especially noticeable being the variety Cuvier, a flower of a rich purple colour, and as seen, very dwarf. Streptocarpus and Begonias were very fine, and in enormous numbers, and a new variety of Cockcomb, with margins of white and gold.

LAW NOTES.

THE AGRICULTURAL RATING ACT AND MARKET GARDENERS.

SMITH v. RICHMOND & PIPER.—This was an appeal by way of special case from the decision of certain justices of Worthling, and raised an important point under the Agricultural Rating Act of last year.

The Attorney-General, in support of the appeal, said the case raised the important point whether greenhouses or hothouses were buildings within the meaning of the Agricultural Rating Act, 1896, which provided that the occupiers of agricultural land should be relieved of half the rates payable in respect of such land.

The respondent Piper was a market-gardener and nurseryman, and claimed that his ground, being a "market-garden," was entitled to the relief granted by the Act, notwithstanding the fact that certain greenhouses and hot-houses had been erected on the land for the purpose of growing Grapes, Cucumbers, Tomatoes, &c.

The Assessment Committee held that the glass-houses were "buildings" within the meaning of the Act, and therefore not entitled to relief. The justices, however, held that the land in question was a market-garden, and entitled to relief. The Attorney-General submitted that the Act granted relief to agricultural land only, and not to buildings, even though they were used for agricultural purposes, and that therefore the decision of the justices was wrong.

Mr. Justice COLLINS, in giving judgment, regretted to say that he differed from the views of his learned brother (Mr. Justice Ridley). The question was whether the hereditament, which was the subject-matter of this discussion, was or was not a market-garden. In his opinion, the glass-houses on the property were necessarily part of the market-

garden, and the land was not the less used as a market-garden because the glass-houses were erected upon it. When the section of the Act dealt with buildings, in his opinion it dealt with something distinct from agricultural land, and therefore, if he once came to the conclusion that the hereditament was agricultural land, he was not in the least pressed by the provision as to buildings. It seemed to him that any other view would really defeat the purposes of the Act. When the Legislature thought fit to include market-gardens in the exemption made in favour of agricultural land, they must have known that market-gardens under ordinary conditions were largely covered with glass, and they could not have intended to give these gardens a boon with one hand and take it away where the gardens were so covered with glass. To hold that they had done so would in his view defeat the main purpose of the legislation. He was of opinion that the buildings in question were part of the market-garden, and as such the hereditament was entitled to the exemption given by the Act to market-gardens.

Mr. JUSTICE RIDLEY said it was with great hesitation that he differed from his learned brother, but he had not been able to construe the Act in the same way. It appeared to him that the whole scope of the Act was to relieve what was called and defined as agricultural land. The intention of the Legislature was that arable, meadow, or pasture-ground, cottage-gardens of certain dimensions, market-gardens, nurseries, grounds, and so forth, were to be included as agricultural land, and that the occupiers should pay half the rates. The object was to contrast land entitled to relief with the buildings which were not so entitled, and there was no suggestion in the Act that buildings were entitled to relief. The dividing-line seemed to him to be between land and the buildings, and if they once found a building in existence on the land it must be treated as such. He withdrew his judgment, and the appeal would be dismissed.—Leave to appeal was granted. *Daily News.*

GARDENERS' "RIGHTS."—JUDICIAL CRITICISM.

In the City of London Court, on Wednesday, Mr. Commissioner Kerr made some observations of importance to gardeners in their relations with their employers. The plaintiff, Abraham, a gardener sought to recover from the defendant, Mr. Henry R. Smith, the sum of £7 9s. 2d. for a month's wages in lieu of notice, and for travelling expenses.

Mr. LEONARD WELLS, who appeared for the plaintiff, said that the case was a little out of the common. The plaintiff was a gardener, and on May 15 he was managing a florist's business at New Barnet, when he saw an advertisement in one of the gardening papers in which the defendant advertised for a gardener. The plaintiff applied for the post, and, in reply to a letter from the defendant, he called. The defendant was satisfied with the plaintiff's references, and said he would suit him very well. Before being engaged, the plaintiff said he thought he would like to see the defendant's place at Horley. It was arranged that he should go down there, which he did. The plaintiff then being satisfied he was engaged as the defendant's gardener at wages of 30s. per week, that including an apprentice whom the plaintiff had. It was also agreed that the plaintiff should have a cottage to live in, and milk and vegetables were to be supplied to him. The defendant promised to pay the plaintiff's expenses of removing from Barnet to Horley, which the plaintiff told the defendant would come to about £7. The man who was in the defendant's service was dismissed so that he should leave on June 26, and the plaintiff was to have gone in on the 28th. Everything was settled, but the defendant changed his mind, and declined to take the plaintiff, sending him 7s. 6d. for his expenses in going to Horley and to the City. The plaintiff's rights were not to be treated in that manner, and he had brought his action.

The plaintiff was called, and he bore out the statement of his advocate.

Mr. Commissioner KERR said that assuming there was an engagement he could not see what damage the plaintiff had sustained. The plaintiff said he had been out of work since June. Mr.

Commissioner KERR pointed out that that was not necessarily in consequence of defendant's breach of contract. The plaintiff said it was agreed between them that he was to have a month's notice when leaving the service, and as he was engaged he asked now that at any rate should be paid him. He also claimed that he was entitled to be paid a day's pay and railway fare when he went to see the defendant before there was anything like an engagement. That was, he contended, the custom which prevailed amongst gardeners. He had a right to it, and he thought the Court should award it him. He denied that he agreed to take the situation as a weekly servant.

Mr. Commissioner KERR said that gardeners could not charge their time when they were looking for a situation. There was no obligation upon a master who intended to engage a gardener to pay his expenses, unless he promised to do so. It was sometimes done, but there was nothing to make a master liable for it. The plaintiff said he had never known a master to refuse to pay not only the expenses, but a day's pay as well. Mr. Commissioner Kerr said that was preposterous.

The DEFENDANT, in his evidence, said that he never engaged the plaintiff. It was absolutely untrue that he ever took him into his service. The matter was discussed, and the plaintiff asked him if he would pay for his furniture being removed from Barnet to Horley. When the plaintiff told him it might come to £8 or £10, he said he would consider the matter. He demurred to paying the removal expenses, and he asked what would happen if the plaintiff left his service—say in a week. To that the plaintiff told him that it would be his (defendant's) loss. Then he decided not to take the plaintiff, and he sent him 7s. 6d. to pay for going down to Horley. As for the other expenses it was ridiculous to suggest that he was liable for them.

Mr. Commissioner KERR said he was not satisfied that there was any engagement. There would be judgment for the defendant, and he would be allowed his costs.

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since Jan. 3, 1897.		Total Fall since Jan. 3, 1897.	
	Above (+) or below (−) the Mean for the week ending July 31.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 3, 1897.	Below 42° difference from Mean since Jan. 3, 1897.	More (+) or less (−) than Mean for the Week.	No. of Rainy Days since Jan. 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	Day-deg.	Inch.	Inch.		
1	2 +	108	0 + 111	8	2	126	22.6	21	31
2	3 +	127	0 + 82	12	5	115	16.6	44	32
3	3 +	142	0 + 18	78	4	104	12.6	52	24
4	2 +	148	0 + 187	124	4	103	12.4	50	38
5	3 +	146	0 + 168	112	3	102	15.2	53	26
6	3 +	155	0 + 238	180	4	94	15.4	49	40
7	3 +	126	0 + 71	21	4	125	23.2	38	33
8	2 +	137	0 + 148	92	8	117	17.2	45	35
9	3 +	144	0 + 251	138	6	119	22.8	46	39
10	3 +	130	0 + 49	8	3	134	22.8	32	30
11	3 +	156	0 + 164	57	4	126	23.8	28	32
12	1 +	147	0 + 315	80	5	128	18.8	48	42

The districts indicated by number in the first column are the following:—

- 0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; *Channel Islands.

NOTICES TO CORRESPONDENTS.

ASPIDISTRA: K. & B. The spots on the leaves are caused by a fungus, *Ascochyta Aspidistræ*. Remove all affected leaves and burn them. Dress the plants with the Bordeaux Mixture.

CARNATIONS SPOURING: C. Y. sends flowers of three very distinct colour and marking, all from one plant. It shows what, indeed, needs no proof, that all the varieties of Carnations sprung from one common ancestor.

CORRECTION. Report of Royal Horticultural Society's Meeting, July 27. *Fe Begonias*, for *B. Hartland & Son, &c.*, read *R. Hartland & Son, the Lough Nurseries, Cork*.

CUCUMBER HOUSES: J. Market. A suitable kind of house for winter and spring forcing is the one with hipped roof, the longer slope facing south, the width 12 feet, passage in middle, brick pits 4 feet deep on either hand, these being furnished with hot-water pipes for bottom-heat. Four rows of 4½-inch pipes are required for top-heat, and these should not be buried in a channel in the floor, but be exposed but, still not brought in the vicinity of the bins. A water-tank should be placed at the end of one of the beds capable of holding 50 to 60 gals. of water, and if the rain falling on the roof can be conducted into this tank, it will be an advantage. The outer walls of the pit should not be less than 9 inch brickwork, or more if stone be used, the inner walls being 4½, with oaken sills to the beds. The roof should be fixed as regards the long slope, the back slope consisting of hinged lights; top ventilation should be obtained by means of short movable lights worked with chain or lever, and front ventilation may be dispensed with. See that the heating apparatus is fitted with a cut-off valve, where that portion of it which heats the beds enters the chambers beneath them. One or two openings 1 foot by 2 feet should be made in the wall of each bed, these being fitted with iron or wooden doors. For makers, consult our advertisement columns. Houses for summer cultivation should be span-roofed, and run north and south. It is a saving of fuel to build forcing-pits of this kind partly underground.

CUCUMBERS: J. H. No fungus, but something wrong with the cultivation, about which you tell us nothing, and therefore we are unable to help you.

EMPLOYMENT AT KEW: Kew. Applications for employment are entertained as vacancies occur, and the would-be pupil must forward his application to the Director, W. T. Thiselton Dyer, C.M.G.

GRAPES SPLITTING: Vines, R. H. W. For methods of treatment, see Calendarial article in *Gardeners' Chronicle*, "Fruits under Glass," p. 50, July 24 last.

MELONS: H. McCallum. There is no fungus disease in your leaves, but their appearance is due to some local cause. We have seen the same thing before, which was remedied by altered conditions. There is some mistake in the culture.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—B. G. Cassia corymbosa.—M. Cuthbertson. Astilbe Thunbergii, Helenium grandiflorum, Sidalcea oregana, Centaurea nigra.—J. R. Spirea Lindleyana, Bilbergia, but of which species we cannot determine until we see flowers.—R. H. W. Adiantum decorum, Ivy-leaf Pelargonium l'Elegante.—H. Stanley. 1, Hedy-chium Gardnerianum; 2, Dendrobium crystallinum; 3, Maranta Massangana; 4, Fittonia argyroneura; 5, Francoa ramosa; 6, Stanhopea Bucephalus.—A. M. Poa rigida.—A. H. Dendrobium bicameratum, Epidendrum volutum. The Fern is Pellea (Platyloma) flexuosa; the variety of Odontoglossum crispum is very good.—R. M. Rhodotyus Kerrioides.—Daphne. The Palm misses the growing temperature of the house from which it was removed for sale, and possibly got some check at the roots during removal.—E. J. The bulbs in the clump were possibly mixed. Those of which you send specimens, represent the so-called double form, which has been in cultivation in this country for 300 years.—J. M. B. The Dendrobium has probably been in a very low temperature, at some time during its growth; possibly at night, and during the time it has been very moist. Sometimes the sun's rays will cause a similar injury.

POTASH: F. S. The application of potash to the Strawberry-beds may consist of commercial potash, or it may be afforded in the form of wood-ashes

made from young twigs and shoots. The manure would supply the necessary nitrogen you have it not, it could be afforded as nitrate of soda. We would advise you to read the article the "Chemistry of the Strawberry," which appeared on pp. 490 and 591 of vol. xx. of *Gardeners' Chronicle* for 1896.

POTATOS: A. C. Wills. It is not at all unusual for Potatoes to produce tubers in the axils of the leaves. It is often caused by some injury to the tubers by a thrust from a fork—or other cause.

SULPHIDE OF POTASSIUM AND BORDEAUX MIXTURE. The first is known commonly as *li sulphur*, and is sold by most chemists. The second may be made at home, using the following formula—Copper sulphate, 4 lb.; fresh unslaked lime, water, 40 gal. Place 6 gal. of water in a wooden tub, and hang in it 4 lb. of pulverized copper sulphate in coarse sacking. Slake the lime by adding water only as fast as it takes it up, and add together. Before using dilute to 40 gal. The lime should be added to neutralise the free sulphuric acid. To test this, get a pennyworth of yellow prussiate of potash from the chemist, and place in a bottle of water. Add a few drops of this to the Bordeaux Mixture before it is diluted, and turns the mixture brown, the lime is deficient more must be added.

THUYA LOBBE DYING: A. C. R. We do not infer from the appearances presented, that the mould on the roots caused the death of the plant. The causes suggested by you, we think the use of a weed-killer is the most likely. Send a portion of the foliage.

TILLANDSIA AND ECHMEA, AND MANURE-WATER: A mild infusion of, say, spent hot-bed-manure half-decayed leaves, might be permissible, if poured over the leaves. These plants are epiphytic in their native habitats, and they are doubtless partially nourished by rain-water and dew rotting leaves, that fall into the leaf-receptacles.

TOMATO: Constant Reader. Peronospora infests spray with potassic sulphide, 1 oz. to 3 gal. water; or use the Bordeaux Mixture.

TOMATOS: T. S. B. The leaves are partly destroyed by a parasitic fungus, probably the same as which causes the Potato disease. We will destroy the affected plants to prevent further mischief.

VEGETABLE MARROW: Hybridist. Many, probably unisexual plants occasionally become bisexual Yew, for instance. Again, it is very common the Vegetable Marrow to produce male flowers first, and later on female flowers. We have seen hermaphrodite flowers on the Veg. Marrow. There is no rule without exception in plant life.

VEGETABLE MARROW PLANTS: A. Y. Pinchi. Moderation may be recommended, as it is in developing fruit-bearing laterals. When grown in these plants in frames for early fruiting, pinching becomes a necessity till such time as the vines become warm, and the bine may run outside.

VINES AND MILDEW: Shanklin. For the Vine to be attacked every year seems to point to error in management, or to the neglect of measures to eradicate the pest once and for all. Apply in (flowers of) with a sulphurator or pair of syringing bellows. This may be syringed off before sending them to table, or use the Bordeaux Mixture. In the late autumn, thoroughly clean the vine, taking out a layer of the soil of the tub substituting fresh loam and dung for it, and wash the Vines with the Bordeaux Mixture. Limewash walls, putting a handful of mixed sulphur water as thick as table mustard into the lime. Sulphur and sour milk and lime should be used to paint the hot-water pipes, and the Bordeaux Mixture should be used on the Vines once or twice after flowering. Arrange the ventilation so as to be able to give air at the top of the house less or not any by the front sashes. See if plants apt to be infested by mildew are grown in the vicinity of the house.

COMMUNICATIONS RECEIVED.—C. N.—H. A. G.—F. H. & Sibray (next week).—J. of H.—E. J. B.—Chrysanthemum Society.—Lincolnshire Echo.—H. O. Geneva.—C. Y.—G. Southport (next week).—Ch. S. Moore.—R. D.—M. D.—J. B.—H. H. D.—E. C.—J. J. W.—G. W. E.—D. R. W.—A. C. F.—T. B.—W. B. H.—G. D.—H. M. E.

PHOTOGRAPHS, SPECIMENS, &c., RECEIVED WITH THANKS.—A. S. (next week).—A. B. (next week).—J. C. (next week).—(Market Report, see p. vii.)



THE

Gardeners' Chronicle.

SATURDAY, AUGUST 14, 1897.

ASTER SICKNESS, AND ITS CAUSE.

ON July 25, I happened to be staying at King's Hill, in the parish of Wednesbury, Staffordshire; and during the afternoon my host, Mr. Smallman, mining engineer, took me round his garden. While we were examining the flower-beds, he drew my attention to those which were planted with China Asters, and remarked that they were a complete failure. For several years he had prided himself on his success as an Aster-grower, but this year he had not produced a single perfect blossom. The plants grew some 4 to 6 inches high, but after being bedded-out made little, if any, progress, and soon began to shrivel or dry up and sicken off. He had heard that several other growers in the neighbourhood were similarly situated, but could not tell what was the cause. My off-hand remark was, "You probably have a little worm called *Tylenchus* at the root," a thought which naturally suggested itself to the mind of Dr. Masters also when I reported the case to him. Pulling up one of the affected plants, and looking at the roots with my pocket-lens, I immediately found what I thought to be the *Tylenchus*, and handed it to my friend, that he might see the cause of all his trouble. I then lifted a couple of other affected plants, and put them in a tin, for the purpose of determining the species on reaching home. On the following day I found a number of worms living gregariously within the tissues of the roots, but was greatly surprised, on putting them under a low power of the microscope, to discover that they were not *Nematoids* at all, but well-developed and clearly characterised oligochaets belonging to the *Enchytræidæ*.

Owing to the fact that nothing is said about the life-habits of the species which it most nearly resembles, I shall in this paper assume that the worm which causes the Aster sickness is a species new to science, as it certainly is to Britain, and shall describe it accordingly. I shall then draw attention to one or two matters of practical interest to florists and gardeners.

ASTER-WORM: *ENCHYTRÆUS PARVULUS*, Friend.

The worm is 3 to 5 mm. in length, or about an eighth of an inch (see fig. 27, p. 98). It is therefore the smallest species known to science, since Tauber's *E. minutus* is insufficiently described, and cannot be certainly identified. Viewed under a pocket lens, it is white or silvery, and when seen under the microscope, the first six or seven segments are pellucid, while the remainder of the worm's intestinal organs are covered with dark cells. The character by which it may be most readily distinguished by the microscopist who is not a specialist in worms,

is the number and arrangement of the setæ. As in other oligochaets, there is an entire absence of setæ, or bristles, on the first segment; while on the twelfth segment, which bears the girdle or clitellum, and the male-pores, the ventral bundles are missing. All the other segments, of which there are thirty in an adult worm, bear four bundles of setæ, of which two bundles are lateral and two ventral. In the first eighteen segments, or thereabouts, there are three setæ in each ventral bundle, and two in each lateral; but in the last ten or twelve segments each bundle, ventral and lateral alike, has three setæ. Thus the bundles are all either couples or triplets, and the order and arrangement are definite, not irregular or promiscuous. There is a large head-pore between the prostomium and the first ring, i.e., the one without setæ, and when a little pressure rests upon the worm's body, the fluid and particles contained within the coelomic cavity and head are poured out of this aperture, thus relieving the pressure. The brain is somewhat pear-shaped, rounded off, or convex at the hinder margin, and there is a slight tendency on the part of the ventral nerve-cord to broaden between the third and fourth segments. The blood-vessels and other parts are of the usual type; the girdle is slightly papillose, and accompanying the pores on the twelfth segment are somewhat large vase-shaped glands.

AFFINITIES.

It will at once be seen that the worm comes very near to *E. argenteus*, Michaelsen. I regret that Dr. Michaelsen, who has favoured me with several of his monographs, has not been in possession of a duplicate of his article in which this species is described. I am, therefore, limited for information to Mr. Beddard's brief digest in his admirable *Monograph of the Oligochaeta*. He gives the following definition and note. "*E. argenteus*, Mich.: length 5 mm.; number of segments 30; setæ, 2 or 3 per bundle. Brain convex behind. Anteseptal part of nephridia of equal diameter with postseptal part, containing also a coiled lumen; duct comes off at right angles, and is long and distinct. Habitat, Germany (Elbe shore). This species appears to be the smallest of the *Enchytræidæ*. The name of the species was given to it on account of its silver colour, due to the dark pigmentation of the perivisceral corpuscles." It seems likely that the British and German forms may be ultimately referable to the same species. In that case the name *parvulus* will be withdrawn.

ENCHYTRÆIDS AS PLANT PESTS.

In the valuable little work on the *Plant Life of the Farm*, by Dr. Masters, we read (p. 135) that "Death at the root may result from injury inflicted by small parasitic worms, &c." Against this I made a reference some years ago to the article in *Nature*, vol. 40, p. 11, May 2, 1869, by Mr. Allen Harker on "A New Pest of Farm Crops," in which the writer adduces evidence that not only flowers in gardens, but Clover-plants in fields are injured and destroyed by species of *Enchytræus*. Curiously enough, though the fact has been more than once referred to since, our great authorities on this group of annelids make no allusion to the predatory life of the worms belonging to this genus or order. I have frequently examined white worms belonging to the *Enchytræidæ*, which were living on the roots of plants; and have notes of more than one species new to science which were infesting grass crops, so that it may be regarded as a

well-established fact that the white worms belonging to the genus *Enchytræus* and its allies are destructive to plants.

Mode of Action.—My observations confirm those of Mr. Harker. The minute worm obtains admission to the roots and rootlets, and lodges under the epidermis, where it sucks the juices of the plant, or even (as microscopic examinations shows) breaks up its cell structure and swallows the vegetable tissues, thus preventing the plant from sending moisture and nutriment through the stem to the leaves. Though the worms have no teeth, their mouths act as suckers, and they very quickly divert the nutriment from the ordinary channels to their own oesophagus, to the ruin of their host.

Naturally enough it will be asked, "What is the remedy?" It must not be assumed that all decaying Asters are eaten of worms. If, however, the lens reveals their presence, drastic measures must at once be adopted. If it were possible, the moment sickness showed itself, to lift the plant, excise the injured part and re-set it, the evil might be arrested. There would, however, still be two dangers. The plant might be unable to recover, and if it did, the eggs of the worm, which are infinitely small, and would never be detected, may have been deposited in the tissues. This being so, young worms will soon appear again, and the plant succumb after all. The only way to ensure the destruction of the pest when once in the plant, is to uproot every sickly individual and consign it instantly to the flames. Should any florist or gardener, whose flowers (whether Asters or otherwise) are affected, discover traces of worms about their roots, I shall be happy to submit them to examination and report the results. Specimens should be sent in tins to prevent the worms drying up, with a stamped addressed envelope for reply, to Rev. Hilderic Friend, Ocker Hill, Tipton. *Hilderic Friend*.

THE DISEASES OF PLANTS.

(Continued from p. 61.)

II.—REMEDIAL TREATMENT FOR DISEASES.

IN spite of all precautions, fungous diseases will almost certainly make their appearance where plants are grown to any extent. The methods suggested for combating diseases of fungous origin are far too numerous to allow us to follow each in detail. In many cases, too, there is as yet considerable difference of opinion as to the application of remedies and their success. Fortunately, the remedies against fungi may be classified into certain groups, so that their application may be indicated in a simple manner with fair accuracy. It is impossible here to prescribe in detail, because the treatment necessary for each case varies according as the plant attacked be Carnation, Rose, or any other; even varieties of the same species, or a difference of locality, may require a change in time or mode of application of the remedy used. Our aim for the present is to indicate safe principles, leaving details till further observations allow one to say more exactly the treatment necessary for each plant in each locality.

Mildews.—A very large number of plant-diseases are caused by parasitic fungi, which form downy, floury, or mealy coatings on the foliage, twigs, or fruits of their host-plants. These coatings are commonly spoken of as "mildews," and are caused by forms of fungi widely separated in the classifications of the scientific fungologist. The methods applicable

for combating them fall into two distinct classes: (1) treatment by application of dry powders; (2) treatment by spraying.

Powders as Fungicides for Downy Mildews.—Fungicidal powders have been employed with most success against the fungi known as the false or powdery mildews—the *Erysipheæ*; they occur on nearly all cultivated crops, particularly on Roses, Apples and allied fruit-trees, Gooseberry, Peas and Beans, Cucumber, and Vines. These fungi are distinguished by living on the surface of their host-plants, and only sending tiny suckers into the inner tissues. The summer conidia or spores give the mildew-like appearance so characteristic of these fungi, and spread the disease rapidly; the winter spores are housed in capsules, which appear as black points on the dead or dying remains of diseased plants. Since these fungi live exclusively on the surface, their treatment is fairly simple, and usually effective. To sprinkle infected parts with sulphur in some form is one of the commonest methods used. The sulphur may be applied dry, as flowers-of-sulphur alone, or mixed with quicklime; a light brush, rabbit's tail, sulphur puff, or other implement should be used to sprinkle the powder lightly and evenly. An objection to dry sulphur is that it does not adhere well to some kinds of foliage, but is readily blown or washed off; this is counteracted by mixing the sulphur with quicklime or with water in proportions varying from one ounce of flowers-of-sulphur in five galls. of water up to several ounces per gallon of water. A useful sulphur-lime mixture is known as Grison's fluid; it consists of flowers-of-sulphur 3 lb., quicklime 3 lb., water 6 gallons. This is boiled till the liquid is reduced to two gallons, allowed to settle, then the clear liquid is drawn off into bottles and kept well corked; when used, one part of the stock solution is diluted with 100 parts of water. Some Rose-growers add soft-soap and petroleum to mildew mixtures, thus making the treatment a combined one, directed, not only against mildew, but also at green-fly or other insect pests. A mixture of this kind recently recommended in the *Gardeners' Chronicle* consisted of 1 lb. soft-soap boiled in 4 quarts of water, then one wine-glassful of petroleum and four of flowers-of-sulphur added; the whole was kept as a stock solution, and diluted as required with about twenty parts of water to each part of solution. Sulphur vapour produced by gently heating flowers-of-sulphur is a combined fungicide and insecticide for indoor use, but it must be carefully used where foliage is delicate. Bordeaux Mixture and other copper mixtures described below are efficient remedies against powdery mildews; where these are already in use for spraying there need be little fear of the surface mildews. Powders containing salts of copper, e.g., Fostite and David's powder, have been used in the dry condition for mildews of all kinds, but no advantage can be claimed over Bordeaux Mixture and solutions of an allied nature.

Wherever mildew is present, great benefit will result if the mildewed leaves be hand-picked and burnt, provided the number taken off will not hurt the growth of the plant. A light and careful pruning of mildewed twigs, e.g., of Roses, either during summer or in early autumn, followed by immediate burning of the prunings, is a capital preventive measure for the next season, and for the same reason it is best to burn all prunings from plants liable to mildew, and so destroy the winter spores.

Spraying Mixtures as Fungicides.—The downy mildews present another large group of fungi well known for their ravages on cultivated crops. Amongst them are the cause of the Potato disease, the true mildew of Vines, Onions, Pansies, and other species belonging to the *Peronosporæ*, as the group of the true or downy mildews is called. In their effects, the downy mildews are distinguished from the powdery by the rapid death of foliage attacked; for, whereas the latter forms of mildew are superficial and may be present over whole leaves before withering of any of the plant results, with the downy mildews (e.g., Potato disease) the foliage becomes brown-spotted within a short time of attack. This arises from the fact that the downy mildews live inside their host-plant, and prey on the softer tissues, which they rapidly kill and cause to dry up. The conidial spores alone appear on the outer surface, either over the whole of a dead spot, or round its margin; the winter-spores are to be found in remains of plants killed. This mode of life is shared by many other fungi quite distinct from the *Peronosporæ*, but because they live chiefly on foliage or young twigs, and produce dead spots bearing conidial and other spores, the methods

prevent stealing, and found that Vines so treated remained free from certain disastrous diseases. Some of the more important preparations of copper may be considered in our next, *William G. Smith, Edinburgh.*

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

ERIOPSIS HELENÆ, Krzl., n. sp.*

THE flowers are the largest yet found in this genus, and they resemble at first sight those of *Eriopsis biloba*, Lindley, but they are more than twice as large as in this species. The callosities on the lip show by their character that the plant is nearer to *E. sceptrum*, Rehb. f., but the flowers of the latter are of about the same size as those of *E. biloba*, and the middle lobe of the lip is quite different. The plant is undoubtedly the finest species of this small genus; it was imported from Peru by Mr. F. Sander, St. Albans. *P. Kränzlin.*

NOTES ON HATFIELD.

DURING a recent visit to these celebrated gardens, I was pleased to see that improvements have been steadily carried out in order to keep them abreast of

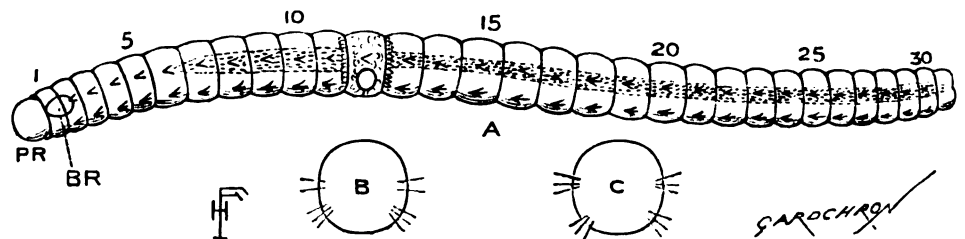


FIG. 27.—ASTER-WORM, ENCHYTRÆIS PARVULUS (FRIEND). (SEE P. 97.)

A, Worm, actual size $\frac{1}{2}$ -in.; B, hind segment; C, front segment.

of treatment against their attacks are in the main points similar, and we propose to consider them together. To this class belong many common leaf and fruit-spotting diseases, a number of so-called "blights" or mildew-like enemies of almost every cultivated crop and vegetable, and not a few diseases of garden plants, especially Carnation, Mignonette, Tomato, &c. The diseases known as Anthracnose also come into this group; they are common on Vines, Raspberry, Kidney Beans, and other cultivated plants. This great and heterogeneous class of fungus-diseases has attracted much attention from the almost mysterious way they make an appearance, and from the great frequency with which they are met in garden, orchard, and farm, as well as the annoying persistency with which they not only destroy whole crops, but cause spotting or stunt growth, so that the market value of produce is considerably lowered. It is against this host of troublesome diseases that the fungicide known as Bordeaux Mixture, and other mixtures of allied nature, have been so successfully applied. These mixtures are essentially solutions of some salt of copper made up in various ways. Compounds of copper have been known to check mildew and smut since the beginning of the present century, since the vineyard-owners of France and Italy sprinkled the Vines nearest the roads with verdigris to

the times. For example, some of the ordinary bedding-out arrangements have been discontinued, and many more herbaceous plants are grown than formerly, these being more in character with an ancient mansion like Hatfield than *Calceolarias*, *Pelargoniums*, and similar bedding-plants. Whatever is attempted here is well done, and usually an immediate effect is required and secured. The ground had been well trenched and manured, new soil being added when found to be necessary, and the growth of the plants was very different to that one often sees in old gardens. The middle of July is not the best time for seeing herbaceous flowers, the early summer varieties being then mostly over, but I noticed *Delphiniums* in many fine varieties, *Coreopsis lanceolata* (one of the prettiest things for cutting), *Lychnis chalcedonica*,

* *Eriopsis Helena*, Krzl., n. sp.—Bulbis maximis, 40 cm. longis, internodio 1 longo, 8 brevibus compositis minute striatis ceterum levibus; foliis lineari-lanceolatis ad 50 cm. longis, 2-5 cm. latis acuminatis; scapo ad 50 cm. longo; crasso valido apice nutante; racemo pauci-plurifloro; bracteis minutis subnullis; ovario c. pedicellis ad 4 cm. longis; sepalis oblongis obtusis, lateralibus quam dorsale paulo brevioribus basi ipsa connatis; petalis angustioribus ceterum aequalibus luteo-aurantiacis purpureo-marginatis; labelli lobis lateralibus transverse oblongis antice liberis obtusis erectis (non semi-reniformibus) sinu rotundato inter illos et lobum intermedium, lobo intermedio obovato-spatulato antice rotundato (neque triangulo neque emarginato), lamellis 2 triangularibus supra divergentibus in disco inter lobos laterales, disco punctulato-puberulo; gynostemio clavato omnino generis. Flores illis *Eriopsis bilobæ* Lindl. et *E. sceptri*, Rehb. f., majores 3-5 cm. diam., sepalis petalisque aurantiaca purpureo-marginata; labellum eodem colore sed macula intense lutea punctis violaceis circumdata in ipsa basi et lobo intermedio eodem colore; gynostemium viride. *P. Kränzlin.*

Achillea ptarmica flore-pleno, *Alstroemeria aurantiaca*, *Chrysanthemum maximum*, &c., doing well. *Phloxes* had just commenced flowering, and many other things were following in succession; and plants of *Tropaeolum speciosum* were growing exuberantly and flowering abundantly on a west wall.

The beds on the south side of the house were tastefully filled with standard *Fuchsias* in variety, carpeted in some instances with an undergrowth of *Swainsonia galegifolia alba*, in others with *Heliotrope*,

walls, arbours, and arches; many gardens would look more inviting if these adjuncts were constructed and covered with *Roses*, *Clematis*, &c.

Fruit of all kinds is required in large quantities at Hatfield, and it must be of the best quality. Mr. Norman, the gardener, is an advocate for "extension training," and he had a fine tree of the Royal George Peach to show with over 400 fruits on it, which would convince anyone of the soundness of this method of training. The tree was planted about

of light for ripening the fruit and the wood. A tree of Brown Turkey Fig on the back wall of this house was carrying a heavy crop of large fruits. One naturally enquires about Strawberries at Hatfield, after seeing the fine specimens which have been exhibited at various times, and I found that potting was just commencing; and the plants were strong and healthy, with roots already pushing through the bottom of the small pots in which they had been layered. Royal Sovereign is at present the favourite variety. Sir Charles Napier, President, and Vicomtesse H. du Thury, are also grown in good quantity. About 7000 plants are annually forced; and, in order to ensure high quality, a portion of the kitchen-garden is planted annually for the purpose of supplying runners; thus, a good commencement is made by obtaining extra-strong and early plants.

Grapes are grown well and largely. Black Hamburgh, Madresfield Court, Gros Colman, Lady Downes, and Muscat of Alexandria being those chiefly cultivated, and the Vines showed good useful bunches in plenty.

The Plant-stove was gay with large specimens of *Adiantum Farleyense*, *Anthurium Veitchi*, *A. Warocqueanum*, *A. Andreanum*—the latter plants were in flower, and were growing in cylinders of sphagnum-moss built up about 2 feet high above the pots; *Cissus discolor*, and other plants at intervals, gave variety. At one end a fine lot of *Saccolabium Blumei*, with large spikes of flower, were suspended in baskets; also some very fine plants of *Gloriosa superba*, in full flower—this is always welcome on account of its prettily-formed, richly-coloured, gay flowers.

Carnations were not quite over indoors; King Arthur, a fine scarlet, as large as *Souvenir de la Malmaison*, was especially noticed, also Miss Audrey Campbell, the finest yellow I have seen. A few very large *Malmaisons* remained. Other kinds grown are Winter Cheer and Uriah Pike. *Cyclamens* are raised from seed annually, the seed being sown in October. About 1000 plants are raised, and these were accommodated in cool pits at the time of our visit, the earliest plants well set with flower-buds, and all looking vigorous. *Cyclamens* are much employed for decorating apartments in the winter season. I saw houses filled with *Dracenas*, *Crotons*, *Cattleyas*, *Calanthes*, and *Cyclogynes*, each of which has a house devoted to it, and all are cultivated in the best manner; but *Scutellaria Mocciniana* must be mentioned specially as a most effective plant seldom seen in good condition, and dotted among Maidenhair Fern, it had a pretty effect.

The kitchen garden was well cropped with vegetables of all kinds, and appearances showed that plenty of the right sort of manure, deep cultivation, timely sowing and thinning, were matters that received full attention. A fine piece of the Criterion Pea was in bearing, and cropping better than any of the new varieties; the quality of the Pea is excellent.

Apple and Pear bushes in the kitchen garden were carrying good crops for the season, and the extension system has been followed in the case of the kinds, and the high state of fertility in which the garden is kept doubtless imparts great vigour to the trees, and enables them to withstand the vicissitudes of the weather. W. H. Divers, Belvoir Castle Gardens, Grantham.

ROSA WICHURAIANA.

THERE are very few of the wild types of *Rosa* whose flowering time comes so late in the year as the end of July and the beginning of August, but of those few *R. Wichuriana* is one (fig. 28). It is of very recent introduction, but the distinct character of its growth and the late date at which it blossoms, have already obtained for it considerable notice in this country, although not so much as in the United States, where it is already a popular shrub. It is a native of Japan, and reached this country by the way of the United States about five or six years ago. The two characters which more than any others distinguish this Rose are its procumbent habit, and the very lustrous dark green colour of its leaves, these



FIG. 28.—ROSA WICHURAIANA, HARDY ROSE: FLOWERS WHITE.

and edged with *Begonia Worthiana*, *Fuchsia Meteor*, *Lobelia Hatfield Blue*, and various other plants, good strong plants having been put in which had already filled the beds.

On the east front, zonal *Pelargoniums* have been chiefly relied upon for effect, with just a few foliage plants to afford variety and contrast. *Pelargonium E. V. Raspail Improved* proves to be as useful a variety for bedding as it is in the winter as a pot plant. The Crimson Rambler Rose is extensively used, and was flowering freely in various places. It is one of the best climbing *Roses* for quickly covering

twenty-two years ago in a span-roofed house 50 feet long, which it now fills. Owing to the situation of the house, which is much shaded by others, the width of the tree is only 8 feet; thus there are 400 square feet of trellis covered by the tree, and the fruits were large, and fit for exhibition purposes—its proof of good culture. In another house a fine tree of Lord Napier Nectarine was heavily laden with its large fruits. This house is a lean-to facing west—not therefore an ideal aspect for forcing Nectarines; but this disadvantage has been partly overcome by training the branches horizontally, letting in plenty

being, indeed, so bright on both sides as to suggest their being coated with varnish. Each one consists of five, seven, or nine leaflets, which are oblong or elliptical, serrated, and from $\frac{1}{2}$ to 1 inch long. The petiole bears a few short spines and bristles, and the stipules have their margins set with glandular teeth. On the strong, succulent, non-flowering shoots of the current year, the wood is armed with stout curved spines, but on the thinner-flowering shoots of the following year they are mostly arranged in pairs just beneath each node. The flowers are of the purest white, and the clusters appear just above the dense carpet of glossy leaves, which completely covers the soil. Each flower is upwards of 2 inches in diameter, the petals (normally five) often numbering six or seven under cultivation. This species should be given a rich soil, and, what is of equal or greater importance, the sunniest possible position. It is, no doubt, the intense and prolonged sunshine it receives in North America that causes it to flower so abundantly there. It is a plant of vigorous and luxuriant growth, and can be increased with the greatest ease by means of cuttings put in during the next two or three weeks. *W. J. B.*

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 63 to 69)

(Continued from p. 84)

3, ENGLAND. E.

CAMBRIDGESHIRE.—The early prospect for fruit was very good; the cold winds and late frost (mostly the latter) caused the destruction of Apples, Plums, and Pears, also thinning the crop of Gooseberries, Red Currants, &c. *J. Hill, Babraham Gardens.*

— Of Apples, Lane's Prince Albert is by far the best crop this year, a local Apple, called Emmeth Early coming next. Of Pears, the Hazel is very good, also Beurré d'Amanlis. Gooseberries were under average, but the prices have more than made up for the deficiency. *Wilson C. Smythe, Upwell House Gardens, Wisbech.*

ESSEX.—The fruit crop here is almost a failure, on account of the late frost we had in April. There was an abundance of bloom on Apples and Pears. *F. King, Havering Park, Romford.*

LINCOLNSHIRE.—The fruit crops have turned out rather poor in this district, owing, no doubt, to the prolonged cold north-east winds which prevailed during the time the trees were in blossom; nevertheless, the majority of the trees are making good and clean growth. Amongst the Apple crops, Codlins are carrying by far the heaviest crops. Plum-trees are bearing very badly in this neighbourhood; in fact, I think I may safely venture to say poorer than they have done for many years past, and there is also a scarcity of small fruits in general. *J. Rowlands, Manor Gardens, Bardney, near Lincoln.*

NORFOLK.—Most kinds of fruit are much below average, Pears being the best. I have good crops of Doyenné d'Été, Beurré d'Amanlis, Citron des Carmes, Williams' Bon Chrétien, Louise Bonne of Jersey; all others being very thin. Of Apples there is none. *H. Batchelor, Catton Park, Norwich.*

— I never remember such a poor crop of Apples in this part of Norfolk; not a tree to be seen anywhere even carrying a third of a crop. Plums the same, very thin; just a sprinkle of some kinds, but the trees generally barren. *William Allan, Gunton Park, Norwich.*

SUFFOLK.—In this district the Apple crop is poor, and the trees have been much blighted. Pears are good, and quite up to the average. Peaches and Nectarines are fairly good, though the trees have suffered much from blister. Apricots are a failure. Of Cherries, Morellos are good, but dessert kinds are not so satisfactory. Small fruits are plentiful and good, particularly Gooseberries; these did not suffer so much from late frosts as in some years, which I attribute to the dryness of the atmosphere, and also to the trees having a good sprinkling of foliage at the

same time. In many gardens the first bloom on Strawberries was destroyed by late frosts; still, the crop has been heavy, and the fruit of first rate quality. *H. Fisher, The Gardens, Plizton Hall, Bungay.*

— With the exception of the Strawberry, crops of hardy fruit that had no protection in spring are much below the average. Peaches and Nectarines on walls, which were protected on cold nights by curtains, are a good crop; but Apricots, that had the same attention, are a failure. *J. Wallis, Orwell Park, Ipswich.*

— The fruit-crop around this immediate neighbourhood cannot be considered very satisfactory. Apples are poor; Pears are a better crop, but not a heavy one. Of Apricots there are none. Peaches and Nectarines have fairly good crops, but the trees have been much affected with blister. Plums are average; more in some gardens than in others. *B. Marks, Hardwicke Gardens, Bury St. Edmunds.*

4, MIDLAND COUNTIES.

BEDFORDSHIRE.—Apples thin, but trees very healthy, making good growth; Pears thin indeed except on walls of east aspect; Plums are also thin except on walls of south aspect; Cherries generally very thin; Peaches and Nectarines very good indeed on unprotected walls, clean, and making good growth; Apricots very thin and scarce; small fruits thin and scarce except Raspberries, which are very good. *G. R. Allis, Old Warden Park Gardens.*

BUCKS.—All fruit-trees bloomed fairly with exception of the Damson; but the weather was very unfavourable during the whole blooming period, and, as a consequence, very little bloom set. All Plums are quite a failure. Apples may average half a crop; some trees which are in a little more sheltered position are a full crop, while others are bare. All trees clean and healthy. *J. Jaques, Waddesdon, Aylesbury.*

— Although the crops of Apples are much under the average, the quality is good, and the trees remarkably free from blight; this latter remark may also be made respecting Pears. The quality of bush-fruit is excellent, no traces of blight or caterpillar having been seen. Strawberries would have been an extraordinary crop had not the earliest blooms been destroyed by frost; notwithstanding this, however, the crop is good both in quantity and quality. Plums and Damsons in some orchards are complete failures. On the whole, the crops are very scanty, but the trees are healthy and clean. *W. Hedley Warren, Aston Clinton Gardens, Tring.*

— The county of Bucks is proverbial for its Cherry and Plum orchards, and many of both abound in this district, Cherries more particularly, and the loss by reason of defective crops will be considerable. In this locality the flowering period was not arisies, and a good set was secured; but the state of the weather afterwards was such as to arrest growth, and cause the mischief and loss that will naturally ensue. Apples are only a partial crop; Pears plentiful; Peaches and Apricots good; plenty of the early kinds of the former now ripe on the walls outside. Black and Red Currants average; Nuts and Walnuts very abundant. *G. T. Miles, Wycombe Abbey Gardens, High Wycombe.*

— Apples are a very partial crop; such varieties as Lane's Prince Albert, Stirling Castle, Keswick Codlin, Niton House, Mr. Gladstone, Oslin, Early Margaret, Yellow Ingestre, Juneating, and Irish Peach, are bearing good crops; while such standard varieties as Blenheim Orange, Cox's Orange Pippin, Duchess of Oldenburg, and many others, have hardly a fruit on them. *J. Smith, Mentmore, Leighton Buzzard.*

— The most serious loss among fruit crops is the scarcity of Apples in this district, especially as regards Orchard-trees. The blossoming was superb, but the cold weather and biting winds experienced crippled the bloom, and the greater part fell off. Out of several varieties, the only ones bearing a fair

crop in orchard are Dutch Mignonne, Red Quarrenden, Sturmer Pippin, Beauty of Kent, Hambledon Deux Ans, and King of the Pippins. Cox's Orange Pippin, Wellington, and Ribston Pippin are slightly cropped. Of bush trees on paradise carrying a fair crop may be mentioned Grenadier (very good), Lord Derby, Cox's Orange Pippin, Worcester Pearmain, Lane's Prince Albert, and Ecklinville. Pears are generally worse than Apples, although occasionally a standard Orchard-tree is seen bearing a heavy crop, one being Beurré Clairgeau. Wall-trees and bushes are scantily cropped, the following comprising the best:—Williams' Bon Chrétien, Bergamotte d'Espere, Beurré Hardy, Josephine de Malines, Madame Teyre, Beurré d'Amanlis, Knight's Monarch, and Doyenné Boussoch. Plums a very poor crop; Cherries on walls good, Orchard poor; Peaches and Nectarines very good, and required much thinning of fruits; trees healthy. Waterloo Peaches ripe on July 10. Apricots very poor; small fruits collectively a fair average crop, of good quality. Black Currants rather poorer in crop than others; Strawberries very good, taken collectively; Nuts over average, and promise, from present appearances, to be very good. *C. Herria, Dropmore, Maidenhead.*

CHESHIRE.—With the exception of Strawberries and Apples, this is one of the poorest fruit years we have had for many years. The early blooms of Strawberries were injured by frost, which also as it will be rather unsafe in our climate to have them too early. Gooseberries are almost a failure; so are Plums, Cherries, and Pears, by the continued cold weather, when the trees were in bud and blossom. Some Apple-trees have very good crops, viz., Grenadier, Stirling Castle, Cellini, and Lord Grosvenor; others are very thin. *R. Mackellar, Abney Hall Gardens, Cheshire.*

— This is a very bad soil for fruit-trees—cold and heavy, not allowing the wood to ripen. Apricots do fairly well generally, and I attribute the total failure of this year to the enormous crop last. Damsons seem also a total failure, which will be a great loss to this district. Something has taken the Strawberry-plants, nearly half of which withered and died in spring from no apparent cause. *C. Wolley Dod, Edge Hall, Malpas.*

DERBYSHIRE.—All stone-fruits are very thin crop. Apples good, and Pears a fair average. Small fruits good, excepting Gooseberries very thin. Strawberries abundant, and very good. *T. Kestley, Gardens, Darley Abbey.*

HERTFORDSHIRE.—The fruit-growers of this district have cause to lament the very cold weather and late frosts of the spring, which have seriously affected the greater portion of the fruit crops in this district, notably Plums, Cherries, Apples, Currants, Gooseberries, &c.; entire orchards are absolutely devoid of fruit. The best crop to chronicle this year is Nuts, which is considerably above the average. Pears come next. The yield of Strawberries was very indifferent, only in some cases reaching half crops. In these gardens we have to submit to entire failure in Apples, Apricots, Cherries, Plums, &c., and only quarter crops in Strawberries and Black Currants. Although it is Jubilee Year, many of our fruit-growers are not jubilant, yet many are not depressed, but take calmly and quietly the unavoidable which has to be endured. *Wm. Garman, Frytheaden Gardens, Great Berkhamsted.*

LEICESTERSHIRE.—Apples, Plums, and Cherries blossomed abundantly, but failed to set owing to the cold ungenial weather prevailing at that time; the wind was principally in an easterly direction, but no severe frost occurred. Pears on walls in many instances set much too thickly, and have been freely thinned; these were protected while in flower with double fish-netting, &c. Peaches and Nectarines outside have scarcely any fruit, although they were well protected when in flower; they have suffered severely from blister this season. Plums have a small crop on walls, none on standards. Gooseberries are very scarce, owing to severe frost when they com-

menced flowering. Strawberries have borne a heavy crop of unusually good quality and flavour. *W. H. Diers, Belvoir Castle Gardens, Grantham.*

— There was abundance of bloom upon all fruit trees this spring. The severe frosts and cold prevailing N.E. winds of May made a complete wreck of the Apple crop, Stirling Castle, Peasgood, Lord Grosvenor, and Seaton House, being the only trees which have a crop. Amongst Pears on pyramids, Louise Bonne and Fertility are the best; Beurré Rance, Winter Nelis, Easter Beurré, Marie Louise d'Uccle, Pitmaston Duchess, are the best. Cherries were a great promise, but most of the fruits have fallen at stoning period. *D. Roberts, Prestwood Gardens, Loughborough.*

NORTHAMPTONSHIRE.—The fruit crop in this district will be about an average; Keawick Codlin, Hawthornden, and Lady Henniker are plentiful; late Apples, as a rule, will be very scarce. Pears, such as Beurré Bosc, Williams' Bon Chrétien, Louise Bonne of Jersey, are fairly plentiful, but the late ones were cut off by frost and snow, and cold winds. Apricots were frozen on the trees. We registered 10° and 12° Fahr. of frost two nights in succession during the time they were setting. *H. Kempshall, The Gardens, Lampert Hall, Northampton.*

OXFORDSHIRE.—Apples are considerably under average, but we have a nice sprinkling, especially on bush-trees. Pears on walls are good. Plums, very few; and the same may be said of Cherries. With Peaches and Nectarines we have seldom failed in the crop, but this year the blister took the trees very suddenly, and I never saw them worse; they are now growing out of it to some extent, but the crop is poor, and cannot come to much. The early varieties, Am-eden's June, Alexander, and Waterloo, strange to say, had very little blister, and are carrying fair crops. Small fruits of all kinds have been good, Gooseberries especially. Strawberries were soon over. *George Stanton, Park Place Gardens, Henley-on-Thames.*
(To be continued.)

BURDOCK AS A VEGETABLE.

THE well-known definition of a weed by Emerson as "a plant whose virtues have not yet been discovered," is confirmed by the better agricultural authority of Schwarz, according to whom "a weed is a plant of which the direct uses are unknown to man." Both the poet-philosopher and the scientific farmer implicitly admit, I think, that as man brings more and more of nature under his control—in other words, as he brings more and more plants under cultivation, many of them, hitherto scorned as weeds, must cease to be considered as such. I have often seen ridiculed the Chinese custom of eating birds' nests, bears' claws, and other incomprehensible delicacies, but I cannot help admiring the power of pantophagy on the one hand and the refinement of culinary skill on the other, which can convert into means of human enjoyment things apparently worthless and revolting. If, as philosophers say, civilisation consists mainly in bringing natural forces under man's subjection, China must be given a high place in the scale of civilisation from a culinary point of view.

Is it not a real triumph of art to extract food for man from so coarse and ugly a weed as Burdock? Most books on botany in the English tongue describe Burdock, Lappa major or officinale, as a pestiferous weed, and many an agricultural bulletin gives careful instruction how to destroy it.

The medicinal uses are not to be despised, but they are unimportant when compared to the value of the plant as an edible vegetable; since the kitchen is more important than the drug-store, the cook is nearer our hearts than the apothecary. Even in England the alimentary value of Burdock was not always despised. Sowerby writes in his *Useful Plants of Great Britain*, "The stalks of the Burdock, cut before the flowers open and stripped of their rind, form a delicate vegetable when boiled, similar in flavour to Asparagus. In the raw state they may be eaten with oil and vinegar as salad. They were sometimes candied with sugar in the time of Bryant, as those of Angelica are."

In Japan, Burdock grows wild in several places, but it is also extensively cultivated as a vegetable. Everyone knows and eats it. It is a valuable plant for this purpose.

almost obsolete name is "Kitakis"; sometimes it is called "Uma (horse)-fuki (Nardosmia)." It is familiar to the Ainu under the name of "Seta (dog)-korokoni (Nardosmia)." Both the Ainu and the Japanese prefixes, "seta" and "uma," when applied to plants, seem to have much the same sense as the English "dog," in Dogwood, Dogbane, &c., and the "horse" in Horse-radish, Horse-chestnut, Horse-mint, &c. The Ainu use it as food as well as medicine. They boil the tender shoots with Beans, and the roots are put into soup. For medicinal uses the young leaves are softened by rolling them between the palms, and applied to skin eruptions. The Japanese esteem Lappa for similar purposes. It is used in many preparations for its medicinal properties, which they believe—at least, the old-fashioned empirics believe—consist in counteracting the action of some kinds of poisons. Grated and made into pulp, the roots are applied as a poultice in eruptions of the skin. But by far the more important use is made in the kitchen. As regards this plant we have out-tripped the pantophagous Chinese, for they have not raised the plant to the dignity of a market vegetable. "When young," says a Chinese book on botany, "the tender leaves of the Lappa are cut and eaten as greens; the roots may be boiled or steamed and eaten, but people nowadays rarely use the plant." Among the Japanese, however, it has been under cultivation for years, and possibly for centuries. It enters the kitchen of every household, not being ostracized from the menu of the most high-toned restaurant. Thousands of acres are devoted to its culture. Official statistics for 1888 give the total production of Lappa in the country at about 72,000,000 pounds, valued at 422,134 yen. The roots average 350 grains in weight.

The production of so large a quantity is not at all to be wondered at when we recollect that Lappa ranks high in the scale of nutritive plants. In the amount of nitrogen it stands higher than Potatoes, Beets, Carrots, or Turnips; in fact, few roots or tubers approach it. I append here its chemical composition, as compared with some other commonly used vegetables:—

	H ₂ O	N	Ash	K ₂ O	Na ₂ O	CaO	MgO	P ₂ O ₅	SO ₂	SiO ₂	CL
Potatoes	750	3.4	9.5	5.8	0.3	0.3	0.5	1.6	0.6	0.2	0.8
Sugar-beets	815	1.6	7.1	3.8	0.6	0.4	0.3	0.9	0.3	0.2	0.3
Turnips	926	1.8	6.4	2.9	0.6	0.7	0.2	0.8	0.7	0.1	0.3
Carrots	850	2.2	8.2	3.0	1.7	0	0.4	1.1	0.5	0.2	0.4
Burdock	738	5.6	10.5	4.3	0.2	1.1	2.0	0.9	0.7	0.1	...

So important a crop as Burdock has, of course, many varieties developed, but the best known among them are few in number. They are usually named from the localities where they were first developed, or where they thrive best.

In raising Lappa much attention is naturally devoted to the right selection of the soil. It is a common belief among cultivators that a light sandy soil is specially adapted to it, and it is true that roots grown from such soil are long and slender, but they are prone to be hollow at the centre and rather tough at the rind. A stronger and deeper soil, say clayey loam, seems to impart firmness to the root and a better flavour. To gain the most satisfactory results, the soil must be ploughed deep and finely pulverised, or else an undue amount of labour will be required in harvesting the roots. Indeed, digging Burdock is a proverbially hard task; it has become almost a fine art to do it well. Many an old writer recommends digging the soil to a depth of some 4 or 5 feet, and then putting in green leaves, stalks, turf, and so forth, in a layer of a foot deep, and covering that with the earth that was excavated. The surface must then be well hoed in both directions. So much care, however, is only necessary when exceptionally fine specimens, for show or otherwise, are aimed at. One peculiarity of Lappa is that it is not adapted to rotation—that is, it thrives better if planted continuously on the same soil; in new land the roots are likely to become forked. It is also grateful for good manures—compost, night-soil, and especially to rice-bran—but if compost is applied it must be well decomposed, or else the roots will throw off too many branches.

When the soil is properly prepared, seeds are planted in rows 3 feet apart, five or six seeds being placed every 6 to 8 inches in a row. In Owara, the usual time for sowing is the early part of May or late in April. Before the early part of June the young plants are thinned out, leaving but one in the hill. Very often liquid-manure is applied two or three

times before the roots are harvested, late in December. Another method is to plant the seeds in August, so as to have the vegetable ready for spring use, in which case they are sown more closely, since they do not grow as vigorously as those planted in spring. Lappa is a slow grower, and takes over 220 days to mature. Seeds retain their vitality for five years, and many a gardener asserts that the best crop is obtained from those three years old. They say that new seeds produce roots which throw off too many branches and flower-stalks. This statement, however, is not always verified. For keeping and marketing, the vegetable may simply be left where it was grown, or kept buried in the earth like Beets or Turnips.

I need only state in general terms that, after their skin is scraped or peeled off, the roots may be sliced into long strips or cut into pieces of less than an inch in length, and boiled with soy, salt, or Spanish pepper, to impart savour to them; or, if boiled alone, they may afterward be browned in sesame oil, which of itself will flavour them. Another common way of cooking them is to scrape off the outer skin and cut them into pieces about 2 inches long, then, when they are boiled soft, to take them out of the pan and mash them; then make them into cakes, much as you treat Oyster-plants. A kind of salad, though not uncooked, is also made of them. A rather unique and more elegant process consists in stuffing the roots with sea-eel and boiling them, after dipping them in a preparation containing soy and pepper. Slices of Lappa fried and eaten with some condiments form one of the commonest dishes with us. The roots are sometimes pickled in miso. There are many other ways of preparing this valuable vegetable for table use, but a longer description would be interesting or amusing only to the curious. *Inazo Nitobe, in "Garden and Forest."* [Several years ago we presented samples of this vegetable to Chiswick and to the Fruit Committee, but the vegetables failed to interest the committee, and we heard no more of it at Chiswick. ED.]

BEDDING IN HYDE PARK.

A GREAT French artist once said, "Painting is an art of many sacrifices." It may be well said that gardening, from the picturesque point of view, is also "an art of many sacrifices." As it is practically the making of pictures with living flowers, the artist-gardener must make a selection of restricted material that will give the most beautiful effects in his garden-pictures.

To any one conversant with the style of bedding in vogue, say, twenty-five years ago, a stroll just now along the flower-beds in Park Lane would suggest thoughts giving food for a very interesting mental reflection. It (the bedding) in those far-off days was a huge advertisement, a sensation garden—thousands of a varlet Pelargoniums massed in one bed, between "dowdy" Perillas and yellow Calceolarias; ribbon-borders and pin-cushion beds in plenty, and, in fact, all the floral millinery available.

The area bordering on Park Lane was then a part of the park devoted to "carpet-beds," the designs for which were copied (as the style literally expressed) from carpets or other unsuitable samplers. It was, indeed, a case of covering space by line and measure with geometrical designs (how stiff and formal it all was!), and, as has been well expressed, this giant geometry had "taken possession," ejecting much that was good of old in the matter of herbaceous perennials and beautiful annuals. At the present time, in the vicinity of Park Lane there is only about one bed devoted to carpet-bedding, a good example that has been generally followed. The kind of display of flowers in Hyde Park continues to gain favour with the public, and it may be described in short as the mixed or blending. Whilst the Superintendent, Mr W. Browne, works on quite modern lines, he manages to introduce many of the old-fashioned plants which were so much the admiration of the people a quarter to half a century ago, rightly availing himself at the same time of more recent introductions that will be beautiful, and give increased interest to the flower, and mixed beds.

It is a problem not of easy solution to find something fresh to present to the public every year. "John Bull" is now, more than ever, exacting. He is a kind of horticultural Shrook, and insists upon having his "pound," regarding his flower-pots pretty much as he

does his big dinners!—they must be *en evidence*—a species of rotary transformation-scenes! He does not like to “wait for results,” but has become impatient; and, in fact, expects to see a new thing every day!

An inspection of matters horticultural at Park Lane this season makes it evident that, whilst the insatiable public may not be entirely satisfied, “new ideas” are being carried out, although necessarily, in the matter of planting, it is not found possible to employ entirely new plants.

The beds which were a short time ago filled with Pansies, Violas, Solomon's Seal, Aquilegias, &c., all of which did remarkably well, have disappeared, and they are now replaced with Lilliums, Erythrinas, Fuchsias, Celosias, &c. To refer to some of the beds which attracted most attention on a recent visit, to justify my remark as to the use of old-fashioned plants, here the visitor will see the yellow-flowered *Calceolaria amplexicaulis*, introduced from Peru in 1845, in association with the beautiful dark-flowered *Fuchsia Marinka*, a splendid illustration of the happy marriage “of the old and the new!” Another charming arrangement is constituted by the graceful light-flowered *Fuchsia Mrs. Marshall*, mingling with the dark *Heliotrope President Garfield*, standing on a carpet of vivid *Alternantheras*. Then the eye is carried to a bed in which *Vallota purpurea* is mixed with *Canna Queen Charlotte*, the splendid dark crimson flowers of the former contrasting very effectively with the golden and crimson stripes of the latter. Then, again, the old *Michaelmas Daisy* mingles its slender branches amongst the delicate pink flowers of *Ivy-leaved Pelargonium Madame Crousse*. Effective is the association of *Fuchsias Marinka* and *Mrs. Marshall* with *Pelargonium Madame Crousse*, having some dot-plants of *Begonia castaneifolia*, which latter, although not a tuberous, and a purely evergreen variety, makes a capital bedding-plant, have a good effect. *Erythrina crista-galli*, with its attractive bunches of orange-coral-coloured blossoms, with plants of *Carnation Alice Ayres*, whose flowers are white, tipped with carmine, and of fine quality, and a strong grower, on a carpet of *Violet Blue Bell*, arrested attention. A graceful bed is formed of *Heliotrope President Garfield*, with its bright mauve-purple flowers amongst the dark-flowered *Fuchsia Marinka*; *Celosia plumosa* and *Lilium lancifolium* intermingled, will make a very showy bed soon. A bed of *Carnation Alice Ayres*, on a carpet of *Viola William Neil*, was much admired. The light-coloured *Carnation*, on a ground of the mauve-coloured *Viola*, produced a very pleasing effect. A mixed bed of *Pelargoniums* with *Coreopsis tinctoria*, having a carpet of the *Silver Kœniga variegata*, was very telling. A small bed of *Cuphea platycentra* (commonly called the Cigar-plant), a good old bedding-plant, with yellow and crimson tubular flowers; *Alonsoa lucidaifolia*, a charming plant, of easy culture; *Acalypha musaica*, having a carpet of *Kœniga maritima*, was a pretty feature. A very telling arrangement consisted of *Heliotrope Roi des Noirs*, blackish-purple, white eye, and very distinct; dot-plants of *Celosia plumosa*, a carpet of *Alternanthera magnifica*, with a band of *A. amoena*; *Cosmos bipinnata*, another good old-fashioned plant, introduced as far back as 1799! with a carpet of *Viola lilacina*, and dot plants of that finest and purest amongst the yellow self *Carnations*, *Germania* to wit, make a very light and elegant bed. A remarkably good and effective arrangement consisted of *Fuchsias Mrs. Marshall* and *Scarcity*, *Canna Queen Charlotte*, white-flowered *Antirrhinums*, and *Vallota purpurea*. A pair of beds filled with large crimson-flowered *Pelargoniums* with plants of the *Golden Privet* produce a very rich and striking effect.

Fuchsia Mrs. Marshall, dots of *Acalypha grandiflora*, with a band of *Fuchsia Meteor* (the latter attractive if only for its foliage, the lower leaves buff-yellow, the upper ones rich crimson), having *Ten-week Stocks* growing up between them, make a very elegant bed. One that attracted instant attention was the following arrangement:—The well-known and beautiful *Plumbago capensis*, with groups of *Streptocodon Jamesoni*; this, though an old greenhouse plant, is quite a new thing in bedding, and, so far, it seems to be an

acquisition. The flowers, on first opening, are of a pale colour, changing to a brilliant cinnamon-red—quite distinct from any plant in use here for summer-bedding, and contrasting splendidly with dots of that fine *Pelargonium Henry Cannell*, and the dark-flowered *Fuchsia Scarcity*. It had a carpet of mixed *Godetias* and *Jacobæas*.

Some beds of crimson *Begonias* with plants of *Coreopsis tinctoria* have not done so well at present, the sun and dry weather not suiting them; but in cooler weather they will soon improve. *Heliotrope President Garfield*, planted in groups with *Fuchsia Mrs. Marshall* and *Ivy-leaved Pelargoniums*, and dots of the beautifully scented (at night) *Nicotiana affinis*, make a charming bed. *Fuchsia Scarcity*, planted six in a group, with intermediate groups of *Ivy-leaved Pelargonium Galilee*, rosy-pink, very double flowers, make a pretty bed.

Another bed planted with *Fuchsia Mrs. Rundle*, tube and sepals salmon, corolla rich orange-scarlet, and *Pelargonium (Ivy-leaved) Souvenir de Charles Turner*, flowers deep pink, feathered with maroon, very large pipe and truss, is well worthy of mention. *Fuchsia Madame Cornelliessen* is showing well for bloom, but is rather later than usual; a good flower display will be made in a short time. A bed of dark-flowered *Heliotrope*, with the yellow *Coreopsis*, is a very showy bed.

The usual groups of *Palms*, *Bamboos*, *Araucaria excelsa*, and *Eucalyptus globulus*, arranged behind and between the beds, all help to give the whole arrangement an enchanting effect. J. B.

FEEDING-MULCHES FOR FRUIT TREES, CORDONS, AND BUSHES.

HAVING at Syon a thin soil that rests on gravel, mulching is very necessary, especially in the case of trees and bushes, &c., in the open ground in a hot summer like the present. The month of April this year was not a genial one as regarded the weather, and cutting winds prevailed for weeks; but little rain fell, and drying winds continued to blow till well into May, rendering the mulching of young fruit trees very necessary, especially in the case of cordons and bushes of Apples on the *Paradise stock* which are lifted every few years. At Syon, watering and mulching were both much needed early in the present summer. I believe that mulching is our sheet-anchor in fruit-culture on the light soils of the Thames valley, for but few gardeners could afford the labour necessary to efficiently afford water to their fruit trees without it. Certainly we could not; and not only is it wanted by trees of all kinds in the open quarters, but by those on walls of every sort of aspect.

Cherries especially suffer from drought, and a timely application of water and a mulch do wonders for them, enabling the trees to retain their fruit and perfect it. The wider the space round a tree that is mulched the better for the tree; and in the case of trees on walls, the mulch should extend 3 to 5 feet.

Apricots, Peaches, and Nectarines, all of them worked on the free-rooting Plum stock, benefit more or less from a mulch over the roots, especially the Apricot, and growing as these do mostly on south and east walls, the resources of the roots are severely taxed in dry, hot weather. Old trees are benefited by mulches of half-decayed stable-manure laid on the soil 4 inches thick, the soil containing the roots being previously dressed with superphosphate of lime and nitrate of soda at the rate of 2 oz. to the square yard, and raked into the soil and water afforded to wash it in. It is a dressing that is good for most kinds of fruit-trees when they have become established. Failing these mineral manures, liquid from the stable cess-pit, and that from the cow-stalls, as well as the solid excrement, are excellent for dry soils. The latter should be partly decayed before being made use of. It is now too late to apply mulches to Raspberries and bush-fruits, these being best afforded in June or even earlier, the exact time being a matter of weather. The Raspberry requires, or at least is benefited by a dressing of farmyard-dung as a mulch, weak and superfluous suckers being first pulled up.

We all know and value mulches for the Strawberry beds, and they usually consist of clean straw, or that which a few showers of rain will render clean and sweet; and a mulch should be put to Strawberries before the blooms expand, so as to afford the necessary time to bleach and cleanse it. G. Wythe.

NURSERY NOTES.

WARRISTON NURSERY, EDINBURGH.

SITUATED in Inverleith Row, opposite the Royal Botanic Garden, the Warriston Nursery of Messrs. Thomas Methven & Sons is of easy access from any part of the city of Edinburgh, the cable tramcar from the Mound, in the middle of Princes Street, passing the gate of the nursery every five minutes. Horticulturists who may find themselves in Edinburgh during their holidays should make it a point to include a visit to this nursery, as well as to the Botanic Garden (which is always interesting, and is at present undergoing a thorough renovation) in their programme. About fifteen minutes by cable-car from Princes Street, a couple of hours' time, and a few pence, will suffice to do both places; although a long day might be profitably spent in the inspection of the special features and numerous objects of interest to horticulturists to be seen in them.

In a recent visit to Warriston Nursery, which we had not seen for some years, we found that Messrs. Methven & Sons had in the interval carried out great improvements for facilitating business, and added largely to the number and extent of the glass-houses devoted to the growing of plants and flowers for the regular supply of their customers, and for meeting the demands of their extensive plant and floral-decoration business, in which, under the skilful direction of their able manager, Mr. Alex. Mackenzie, they have acquired great celebrity. We had the good fortune on our visit to have Mr. Mackenzie for our cicerone, which gave a double value to the time we spent in walking through this interesting nursery, and discussing the various points of cultivation and taste with such a consummate master of both. Skilful selection of the best of everything for the special object in view, high cultivation on the most approved principles, and systematic order everywhere, were evidently the strong points in Mr. Mackenzie's successful management of the large and varied nursery and decorative stock under his charge.

TREES AND SHRUBS.

On entering the gate, the borders of the main walk, about 12 feet wide, are seen to be filled with the choicest varieties of ornamental trees and shrubs, many of them handsome specimens of considerable size, and well suited for immediate effect. This is especially the case with many carefully-trained specimens of *Golden Queen* and *Milkmaid Hollies*, as well as others of that useful family, and of the more ornamental kinds of *Conifers*. The golden variegated varieties of *Conifers* assume their richest tints of foliage in the soft, sandy loam of the nursery; and well-trained specimens of the *Golden Yew*, the *Golden Lawson's Cypress*, and the *Golden Retinosporas*, are perfect model plants of golden hue for the decoration of the front gardens of suburban villas, and the pleasure-grounds of the more aristocratic country mansions. In the well-arranged divisions of the nursery a fine, healthy stock of plants of a useful size, and of the best varieties for ornamental purposes, are grown in their hundreds or thousands, as the case may be, all carefully tended and frequently transplanted, to insure compact and well-rooted plants that will move with perfect safety to any distance and thrive well afterwards under all ordinary conditions.

THE GLASSHOUSES.

It is, however, inside the ranges of glasshouses at the present time that the visitor will be most struck by the vigour of the large and varied stock, and the excellence of the methods of its cultivation. One range is filled with young Vines struck from eyes in the usual way early last spring, and now, July, many feet in length, and of a thickness of stem, an

ly, short-jointed habit, more than commensurate their length. As "fruiters" and "planters" it did not be easy to match them, every leaf perfect, the growth robust and firm. An adjoining range filled with a great variety of the best decorative plants of Palms, among which the graceful forms of Kentias predominated. The plants vary in size from the year's seedling to well-furnished specimens of 15 feet in height, with every leaf fresh and erect; plants of great value for carrying out, with best effect, the floral decorations at Court functions at Holyrood, and at other places on important

white Azalea narcissiflora there is here perhaps the finest stock in the country, every plant stocky and well grown, and bristling with buds, which will give a rare crop of flowers in the early winter. It is almost needless to add that Mr. Mackenzie grows and flowers to perfection a splendid stock of Chrysanthemums, his skill in that branch of the business being in prominent evidence at the Chrysanthemum show held annually in the Waverley Market.

Stove Plants.—In a span-roofed range mainly devoted to the cultivation of stove plants for decorative purposes, those grown for table decoration were

more brilliant hues of the leaves of other subjects. The chief aim in growing these foliage plants for table is to have every leaf perfect, the plants freely grown to assume a light graceful habit, and the colours brought out in their greatest brilliancy; and these points are admirably obtained by the methods adopted by Mr. Mackenzie. Similar well-considered methods are employed in the culture of every class of plants grown in the nursery; and in the course of a visit to it, every observant gardener, whether employed in a private establishment or in the commercial branches, will not fail to pick up an idea or two worth remembering. *Visitor, July 31.*

MESSRS. JOHN COWAN & CO., LTD.

With a view to having greater facilities for coping with an increasing business, Messrs. J. Cowan & Co., Ltd., have decided to transfer their chief offices, and ultimately their entire business, from Garston to a branch establishment at Gateacre, which is some six miles in an easterly direction (Garston being south) of Liverpool, where, with charming rural surroundings, mild and salubrious atmosphere, and ample railway facilities for making the establishment readily and easily accessible from all parts, it was considered advisable to betake themselves. For the cultivation of Orchids, always a specialty of the firm, spacious new glasshouses, containing every improvement, have been erected. As a fitting inauguration, Messrs. Cowan purchased a few days ago the entire Orchid collection of Dr. J. R. Jessop, Roundhay Mount, Leeds, removing the plants to Gateacre, where they now occupy two of the new houses. This collection has been often noticed in the pages of the *Gardeners' Chronicle* and other journals, and was admittedly one of the most select collections in Yorkshire. It is intended to further extend building operations, and make suitable provision for importations of Orchids from both known and new sources. The nurseries, which are about 20 acres in extent, contain good collections of fruit trees, Conifers, and other evergreen and deciduous trees and shrubs. *J. I.*

THE NEW NOMENCLATURE OF PLANTS.

THE attempted enforcement on the gardener of new names for plants meets with the same kind of opposition in Germany as is dealt out to it in this country, and for the same reason that almost any kind of name is suitable for a plant, for the truth of which we refer to the often uncooth complimentary names given originally to plants, and which having got into all kinds of gardening books, are not likely to be readily ousted by others. In Germany, one supporter of the old nomenclature throws ridicule in this fashion on the would-be innovators. Last summer I visited my old friend, Andréas. He is a nice dear gentleman, and a great gardening amateur, interesting himself in everything that appears on the surface of the soil, knows every weed, and his entire collection of garden plants is neatly and prettily labelled. One always learns something from Andréas, and he is constantly "on the go." I had not seen the good gentleman for a long time, and I was filled with expectation regarding his latest discoveries. As might be expected, his little garden gave one pleasing impressions. "Hast thou newly-labelled everything?" I inquired of him. With joyful satisfaction he assented. "One must go with the times, and I could not do other than give my plants names according to the most modern views." "I am curious," said I, "in what these modern views consist." "Will soon show you," said he. A large group of Laburnum crowded with blossoms, stood out brilliantly against a background of dark green. "Last year," said Andréas, "every blossom was frozen; but this year my group of Laburnum Laburnum, Voss, has rewarded me two-fold; also the Caragana caragana, Karst, leaves nothing to be wished for. Some time the group was bordered with the small Anelanchier Anelanchier, Voss, but these getting too tall for me, I have substituted the variegated Symphoricarpos symphoricarpos, Voss." "Very neat," I replied, "but it is not necessary for you to repeat each name, my



MR. HARRY TURNER.

A distinguished prize-winner at the General Horticultural Exhibition, Hamburg. (See p. 109.)

sions, which Mr. Mackenzie executes with his known taste and skill. Scarcely any graceful or brightly coloured foliage plant comes to Mr. Mackenzie in carrying out plantations, but a few of his special favourites, beside Palms, and all graceful habited Ferns are well filled specimens, of all sizes, of Ruonymus m'cos latifolius variegatus, Eurya latifolia variegata, agnus glaber aurea, Rhopal'a coreocaden-is, and villea robusta among greenhouse foliaged plants, a regal and zonal Pelargoniums, select Fuchias, huge-flowered Hydrangeas in summer, and an Azaleas, and the choicest flowering plants ad through the winter and spring. Of the early

excellent in freshness, graceful habit, and bright coloring. The Crotons, of which angustifolius, Cheloni, Disraeli Earl of Derby, elegantissimus, and Weismanni are grown in greatest numbers as the best for table purposes—were each fit for a place on a competition table; and the same might be said of the beautifully coloured Dracenas, the old varieties, Cooperi and terminalis, still holding their own in graceful habit and brilliancy of colouring among many other charming newer varieties. Pandanus Veitchii, Dracena Lindenii, and Ficus elastica variegata, as well as Eulalia japonica, are grown in quantity, and well grown too, for the beautifully contrasting effect of their silvery-white foliage, when combined with the

memory is quite good." A pleasant glance in my friend's eyes, "Man, don't feel yourself insulted, that is the newest nomenclature. Instead of *Laburnum vulgare* or *Cytisus Laburnum*, we now say *Laburnum Laburnum*. *Caragana arborescens* is antique, as are likewise *Amelanchier vulgaris* or *ovalis*, and *Symphoricarpos* *Symphoricarpos* sounds quite as well, at the least as *Symphoricarpos orbiculatus*, doesn't it?" "Not quite sure," I remark. Still another nest of caterpillars. "One may search for them every day, and not find the last one," said Andr  es, taking a nest from a small half-standard Apple-tree. "It is now called *Malus malus*! But, Andr  es, that is enormously simple; and it would be still more so were we to adopt the arithmetical method, and say '+12'. The labelling would also be more simple; for instance, instead of thine *Larix Larix*, thou wouldst simply write *Larix2*; or in place of *Cedrus Cedrus*, Voss, *Cedrus2*, Castanea2, Catalpa2, *Cotoneaster2*, *Diervilla2*, and so on." My friend Andr  es made a wry face, saying that people should not make jokes about science. I was not yet certain which of us was right. We approached a small rock-garden, on which I espied a charming clump of *Edelweiss*. "I am proud of that," said Andr  es; "I collected the seeds of *Leontopodium Leontopodium*, Karst, on the Alps." He stepped forward and said, "That charming plant, the Beech Fern, *Phegopteris Phegopteris*, Voss, I brought as a living plant from the Hartz Mountains. *Filipendula Filipendula* comes also from there." "Ach so! thou meanest that *Spirea Filipendula*, L.," I remarked. Andr  es looking sideways at me as much as to say, "There is another fossil, a century behind the times, at the least."

The entire garden was filled with the new names. *Apios Apios*, Voss (*Apios tuberosa*, Much.), was climbing there; *Aruncus Aruncus*, Karst. (*Aruncus silvester*, Kostel, and *Spirea Aruncus*, Lin.), gave beauty to the vicinity of the fountain. *Cymbalaria Cymbalaria*, Wettst. (*Linaria Cymbalaria*, Mill.), clambered vigorously over a low wall; and *Linaria Linaria*, Wettst. (*Linaria vulgaris*, L.), was showing its first blossoms. There were further *Muscari Muscari*, Voss, *Viscaria Viscaria*, Voss, *Omphalodes Omphalodes*, Voss, *Polygonatum Polygonatum*, *Foniculum foniculum*, *Glaucium Glaucium*, *Pentstemon Pentstemon*, *Pulsatilla Pulsatilla*, *Hepatica Hepatica*, *Lagenaria Lagenaria*, *Dracunculus Dracunculus*, and a lot more well-known plants, which were growing not a whit better under their new names as under their universally-known names.

As my friend Andr  es was proceeding to make me acquainted with still more of these old plants, I strongly objected. I was fatigued and thirsty. "Can I offer you anything? Shall it be double K  mmel?" "But Andr  es, look at the consequence. That is now K  mmel K  mmel," said I, shyly. "Make no more stale jokes. I cannot set a bowl of *Ananas Ananas* before you."

We seated ourselves in a shady summer-house surrounded by a group of pot-plants, and I rejoiced that no bad consequences had happened to my old friend from the new plant nomenclature, and I believed we should hear no more about it. But that was not to be, for Andr  es brought up *Adhatoda Adhatoda*, *Malvaviscus Malvaviscus*, *Opuntia Opuntia*, and lastly, the old fruitful *Eugenia Ugni*, which he had newly labelled *Ugni Ugni*, Voss.

"Say no more, Andr  es," I remarked; "I will have none of it." "But it is the most modern, and, at the least, you will allow that these new names rest on scientific basis." In every way Andr  es tried to make the matter clear, and after I had digested a whole series of nomenclature laws, said I to friend Andr  es, "There lately fell into my hands an old Herbal by the worthy Brunfels, who wrote 'Ware nit unrecht wenn man die alten namen auch hett lassen bleiben, sintemal so man einen bekannten menschen, darin er getauft, verwandelt, wird er unbekannt, also auch mit den Krautern';" which we may render thus, "No harm is done if we let the old names remain; but if you change the name a man was christened under, you render him unrecognisable, so also with plants." I see no use in horticulture for the new names. The public does not understand us. In science there may be

some grounds for the system, but you will agree with me that horticulture in many questions of nomenclature should be allowed to go its own way, especially when we are requested to give up old well-established names. W. Monkmeier, *Botanic Garden Inspector*, Leipzig, in "*M  ller's Deutsche G  rtner*" for May, 1897.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By G. H. MAVCOCK, Gardener, Luton Hoo Park, Luton.

Souvenir de la Malmaison Carnations.—The rooted layers should now be potted, the strongest going into their flowering-pots, namely, 7-inch ones, and the weaker into 4½-inch pots, to be shifted once later in the year. A mixture consisting of ½ good loam, ¼ of peat, and ¼ of charcoal, sand, and soot thoroughly mixed together, will suit them very well. The soil should be made moderately firm with a rammer, being careful not to bruise the roots. If the potting-soil is somewhat moist, water will not be required for some days after potting; and when it is afforded, it should be sufficient, then and at all other times to permeate every part, frequent watering being very injurious to this variety. After the layers are potted, stand them on a floor of coal-ashes near to the glass in a low, span-roofed house, affording a light shading for the first week or two; then gradually accustoming them to full sunshine, and admitting more and more air as the root-action increases, not allowing the house at any time to become stuffy.

The Stove.—The shoots of *Dipladenia*, *Stephanotis*, and *Aristolochia elegans* should be laid-in regularly, and the plants well supplied with water at the roots, and not allowed to suffer from injurious insects, but vaporising the house occasionally. The dead sphagnum-moss on the surface of pots in which *Anthuriums* are growing, should be replaced with living moss. *Codineums* (*Crotons*) and *Drac  nas* which have become unduly large or lanky, may be tongued and treated as described on p. 22, vol. xxi. of the *Gardeners' Chronicle*. When rooted, the tops make useful plants for early work next spring.

General Work.—Let the supply of water be gradually withheld from *Achimenes*, *Gloxinias*, and *Gesneras* which have passed out of bloom, and remove the plants from the show-house to a dry pit. Plants of *Euphorbia* (*Poinsettia*) *pulcherrima* and *Euphorbia jacquini  flora*, if growing strongly, may be afforded liquid-manure water occasionally, and a moist-growing temperature, plying the syringe gently amongst them on the afternoon of days that are fine, fumigating the house or pit whenever aphides are observed, and rubbing off with the thumb and finger the brown scale insect as soon as seen. Cuttings of half-ripened wood may now be taken of the show and fancy *Pelargoniums*, and rooted in pots in a cold frame, or under hand-lights, affording water sparingly to them till rooted.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Peaches and Nectarines.—Where fruit is ripening, the house should receive ample ventilation in hot weather, or the fruit will scald on the sunny-side. If the fruit has to be sent a distance from home, gather it with a pair of blunt-ended Grape-scissors as soon as the pulp begins to soften round the stalk; but if it be for home use, leave them on the tree as long as it is possible to do so safely, thereby insuring the proper degree of flavour. Do not let leaves and laterals shade the fruit, frequently going over the trees, to carry out the needful operation of removing or pushing out of the way the offending leaves, &c.

Later Trees.—The application of water to the borders, also morning and evening syringing, are now very necessary operations, and where old trees are carrying numerous fruits, liberal waterings of manure-water, or a sprinkling of fish-manure, will prove very helpful in enabling them to mature fruits of good size. Shoots of use for fruiting another year must be tied-in, and only such, cutting out all useless laterals, and do not crowd the shoots so that the leaves overlap. Mice are troublesome at this season, especially the large brown field-mice, which may be trapped in a fig-4 trap, baited with the kernel of a Filbert. Syringe the trees night and morning from which the crop of fruit is removed, and afford full ventilation.

The Pine Stove.—The time is approaching when rearranging the house and repotting must be carried out; and the present is a good season to prepare for

these jobs, by getting a compost mixed and put under cover in readiness, and getting pots and crocks washed, and the pots crocked. If the smooth Cayenne Pine is largely grown for winter use, the plants will be pushing or have pushed up the flower spike, and Queens being now nearly over for the season, the fruited smooth Cayenne may be moved into the fruiting house or division, keeping the forwardest fruits together at the warmer end, or where they may be readily got at for tying, &c. Afford the plants with swelling fruits weak manure-water occasionally, that is when they need water; keeping the walls, beds, &c., well damped down, and closing early in the afternoon, the temperature being allowed to reach 95° to 100°.

Successions.—These plants will mostly have ceased to grow, and when that is the case they may be kept a little drier at the roots and also overhead, but care should be taken not to go to the other extreme and allow them to get too dry. Afford air freely in fine weather, and discontinue to shade the plants. Any strong specimens that are still growing freely may be repotted, pots just large enough for them to fill with roots before winter being chosen.

Cucumbers.—Preparations should now be made for planting for winter-fruiting, as when these are planted early, and the trellis is well covered with foliage, it is an easier matter to keep up a good supply of fruits in the winter. Let the Cucumber-houses or pits be well washed with soft-soap after clearing the old beds, and lime-wash the walls, mixing some flowers-of-sulphur with it. Let the start be made with small mounds of rich rough compost, affording light top-dressings when the roots come to the light, but do not have large masses of compost, as these rapidly get sodden in the winter, it is then an impossibility to extract the moisture, and bring the soil into a healthy condition. Do not make use of any plant that has become starved and stunted, but only such as will get away at once. Rub off all fruits for a time, stopping the bine when needed, so as to get the trellis entirely covered with good bearing bina. Cucumber plants still in bearing must be cleared of spent leaves and weak shoots, and not allowed to carry large quantities of Cucumbers, nor allowed to become infested with insects. Afford them manure-water liberally, and a slight top-dressing of soil with a sprinkle of a suitable kind of artificial manure. These old Cucumber plants, when treated in the above manner, will often carry on the supply till the young ones commence to fruit.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Making Plantations of Young Strawberry-plants.—The present is a suitable time in which to transplant young plants in rows 2 feet apart each way, making the soil quite firm about them in planting. The plants can be planted either singly or in triangular patches, allowing a space of 5 or 6 inches between each of the three plants thus set out in patches. For this purpose, good strong well-rooted runners should be used, and the land, as advised in a previous calendar, should have a liberal dressing of rich, decayed manure, trenched or deeply dug into it some time previously to allow of the whole settling down, the plants doing better in a firm than a loose soil. A layer of manure 2 inches thick should be laid between the plants, and then a good application of water afforded (in the absence of rain) to settle soil about the roots. Pinch out all runners that proceed from plants as soon as they appear, so as to direct the energies of the plants into the development of large crowns. The same remarks apply to Strawberries which may be growing in pots for forcing-purposes. These should be kept well-supplied with water at the roots, and with top-dressings of artificial-manure laid on immediately before applying clear water, weak liquid-manure alternating with clear water, in addition to the top-dressing.

Pruning Summer-bearing Raspberries.—The canes of last year's growth should be entirely removed now that the fruit-season is past, in order to make room for the canes of the current year, these being secured against wind-waving by running lines of tarred-string on each side of the rows, and fastened to stakes.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Outdoor Tomatoes.—The plants will be making rapid progress, rendering it very necessary that the stem should be securely fastened to the wall, fence, or stout stake, as the case may be. The stems should now be stopped by pinching back to the first cluster of bloom, as any fruit set after this date will not ripen

in the open air. The side-shoots should be removed as fast as they appear, and if the leafage be very dense, a part of it may be cut off, so as to admit light. Liquid-manure may be freely afforded during dry weather.

Cabbage.—The beds of Cabbage in use should be kept clear of decaying leaves, and a heavy application of liquid-manure given, so as to force on the production of a second crop of heads. Large plantings should be made from the June sowings, putting out the plants in shallow drills, and affording plenty of water to settle the soil about them. This crop may be planted at 1 foot apart. The last sowing of Cabbage-seed should now be made for the season, and should the weather keep warm and conducive to late growth, this sowing will be the most certain to plant for the main crop of spring Cabbages; and on the contrary, if growth be hindered by unfavourable weather, plants from the July sowing will be the best, and most to be relied upon. The Cabbage-crop being in most gardens a very important one, it is well to bestow much care upon it. The land that has carried the crop of spring-sown Onions is that generally secured for the principal Cabbage bed; and though the application of manure is not always necessary or advisable, yet the land should be dug before planting it. For Cabbages of large or fairly large growth, the rows should be 2 feet apart, and the plants set out at 18 inches from one to the other; but for Cabbages of moderate size, such as Ellam's, Sutton's Flower of Spring, Wheeler's Imperial, &c., 18 inches between the rows, and a lesser distance from plant to plant, will suffice in most gardens. In some soils these smaller Cabbages attain large size, and the gardener must be guided by experience in the matter of space. A small bed may be planted on a warm border.

Work in General.—Clear off the land all rows of Peas which have gone out of bearing as soon as the pods are saved for seed purposes, if any, are ripe, the ground thus set free coming in for winter Spinach, &c. If, however, intercropping is practised, and Broccoli, Kale, &c., occupy the spaces, it is still important that the Peas be cleared away as soon as possible to prevent the drawing of the former, which need plenty of exposure to sunlight to enable them the better to withstand the inclemency of the winter. If Kale, Savoys, &c., are to occupy the space vacated by the Pea-rows, do not dig the land, but roughly hoe it deeply, and rake off the rubbish before planting it. For a Spinach bed, it may be necessary to dig the ground, but no manure should be employed. Turnips large enough to pull for use may be stored in a cool shed facing north, where they will keep longer in good condition than if left in the soil. Cauliflowers for storing under glass may yet be planted, also Coleworts.

THE ORCHID HOUSES.

By W. H. WAITE, Orchid Grower, Birtford, Dorking.

Intermediate-house.—The following species of *Sobralia* are deserving of cultivation for their showy if rather ephemeral blossoms, viz., *S. macrantha*, *S. m. splendens*, *S. xantholeuca*, *S. Lucasiana*, *S. Princess May*, *S. Warscewiczii*, *S. albviolacea*, *S. virginalis*, *S. liliastrium*, the pretty hybrid *S. Veitchi*, and *S. Kienastiana* (syn. with *S. macrantha alba*), a species with flowers of the purest white, and large. Many of these plants are in full bloom at the present time, and will continue to throw up young shoots and flower for some time longer. The plants require water at the roots rather abundantly, and being of vigorous growth they should not be stinted of pot-room, but those which have filled their pots with roots may be safely repotted after flowering. Large specimens which have become of an inconveniently large size, may be divided and repotted. Owing to the large quantities of water taken by these plants, the pots must be efficiently drained, crocks being placed over the bottom as is done, say, for *Chrysanthemum* or hard-wooded greenhouse plants, using as a compost lumpy fibrous peat, sandy-loam in a rough unsifted state, a small quantity of sphagnum-moss, and a moderate allowance of small crocks. After repotting, afford water carefully, not saturating the soil, but when a plant has become re-established it may be applied copiously. It is not always necessary to repot *Sobralias* as soon as they have filled their pots with roots, as by doing this they become large and unmanageable in a short space of time; but if in good health, afford them occasionally weak liquid cow-manure, and they will continue to thrive for several years without root disturbance.

Cymbidium.—In the same house plants of *Cymbidium Lowianum*, *C. L. viride* (concolor), *C. Lowie-eburneum* x, *C. eburneum Lowianum* x, *C. Hookerianum*, *C. Masterii*, *C. affine*, *C. Devonianum*, *C. eburneum*, *C. ensifolium*, *C. sinense*, *C. giganteum*, *C. Tracyanum*, and *C. longifolium* succeed admirably, for it is a fact that some of these species get into bad health by keeping them in high temperatures, and constant saturation of the materials is equally injurious. A cool, shady part of the house is the best place for them, and the compost should become moderately dry before water is afforded, it being a good sign of water being present when on application it rushes through the holes at the bottom of the pot. *Cymbidiums* in hot weather like the present are apt to be infested with red-spider, which quickly cause the foliage to take on a sickly hue; it is therefore very necessary to keep a sharp look-out for this pest. One advantage of having these plants in a group by themselves is, that they can then be heavily shaded in very bright weather.

Epidendrum Endressii is another Orchid to which red-spider is partial, requiring similar precautions, and sponging the under-side of the leaves. This Orchid should never be allowed to become dry at the root. There are a few species in the cool-house, such as *Odontoglossum grande*, *O. Schlieperianum*, *O. Insleyi* and its varieties *splendens* and *leopardinum*, which usually begin to grow at about this date, and the young growths catching and retaining water, they should be examined every day and the water poured out, otherwise these would soon decay. Any of the above-mentioned plants may now be repotted, using pots of small size, and three parts filled with crocks. After re-potting, place them in the warmest part of the house. *Odontoglossum Bictonense* and *O. Uro-Skinneri* now in bloom should not be afforded much water at the root; and *O. nebulosum*, being liable to rot from much moisture, and now beginning to make growth, is easily injured in the same manner. This species may now be repotted, the pseudo-bulbs being well raised above the top of the pot. The same applies to *Miltonia Warscewiczii* (*Odontoglossum Weltoni*), except that during the summer it should be placed in the cool house, removing it before winter sets in to one a few degrees warmer.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Drogheda, Maidenhead.

Plants for Filling the Spring Beds.—If Wallflower-seed was sown two months ago, the seedlings will require to be pricked off into nursery-beds on the first opportunity, when the weather is cloudy or showery. During the drought, the necessity for affording water to the plants in the open is very considerable, and with the excessive heat it will be prudent to wait a short time in the hope of rain falling rather than run the risk of losing or seriously checking the plants. Last year's plants of *Myosotis* of kinds may be pulled to pieces, with or without roots, and dibbled in, 9 inches asunder, on a north or east border to make plants fit for going out in October, which they will do if duly looked after. Seedlings should be pricked out at a similar distance apart. Pansies and Violets will need to be well supplied with water during dry weather, and providing a change in the weather takes place shortly, old plants may be pulled to pieces, the points of the shoots cut off, and small rooted-pieces pricked out in the reserve-garden to furnish plants for autumn-planting. Primroses, *Polyanthus*, and Daisies may be similarly treated.

Seeds should now be sown of *Silene pendula* in variety; *Saponaria calabrica*, *Nemophila*, *Limnanthes Douglasii*, *Collinsia bicolor*, *Candytufts*, and *Godetias* in variety. The Brompton and Intermediate Stocks of various colours may also be sown in drills in the open border, the seedlings being potted-up when large enough. If the seeds of *Silene*, *Saponaria*, *Nemophila*, &c., be sown thinly in drills drawn at a distance of 10 inches apart, pricking them off does not really become necessary, and they may be removed to the flower-beds or borders in due course.

Propagation.—A start should be made forthwith with *Pelargoniums*, which have made this season a stiff but free growth, and the cuttings of which are fairly plentiful, and in a good state for striking. The earlier these are struck now, the fewer will be the losses in the winter. Cuttings of these plants strike freely in rather light soil on any sunny border, and they may be potted up or placed in boxes for the winter when rooted. The more general practice is to insert the cuttings in pots or boxes of sandy-loam,

and stand these in a sunny position. It is advisable to start with the variegated and golden-leaved varieties first, these being tenderer than others, and requiring to be rooted earlier. In the event of a change to rainy weather, the boxes or pots should be put in a cold pit or frame, with the lights placed over them, and well tilted at the back. If Pink-pippings are not yet made, no more time should be lost in inserting them in the manner previously advised. The layering of Carnations should also be attended to without delay. The propagation of other bedding subjects requiring alight bottom-heat, viz., *Iresines*, *Alternantheras*, *Heliotropes*, &c., may be deferred to the end of the month.

General Work will consist chiefly in maintaining tidiness everywhere, and affording water to suffering subjects, of which *Phloxes*, *Michaelmas Daisies*, *Heleniums*, *Sweet Peas*, *Roses* that will flower later, *Helianthus*, *Feins*, *Lobelia cardinalis*, *Gladiolus*, &c., will stand greatly in need. The carpet-bed plants will require much pinching and clipping to keep the outlines of the design clear. Lawns, where not regularly afforded water, will have become brown, and should not therefore be mown with a machine whilst the dry weather continues, but skimmed over with a scythe to cut off bents and grass-haulm.

THE APIARY.

By EXPERT.

Uniting Small Swarms.—Bees unite peaceably off combs by throwing them together, and allowing them to run into a clean empty skep or box. Therefore, if the bees of two swarms are to be united, drive both lots, and then put them together, afterwards running them into a hive as one swarm. To unite driven bees with stocks, sprinkle both lots with flour, and shake some of the bees off the combs upon those running in. Thus they are not only well dusted, but thoroughly mixed.

Foundation Sheets.—In the brood chamber always use full sheets; it is most economical. If half-sheets are used, the bees will almost be certain to finish the combs with drone-cells, which means an annual and heavy loss of honey, because, whenever there are drone-cells, the queen practises economy in laying eggs to produce drones, but this is not economy from the bee-keeper's point of view, as consumers of honey are greatly increased, while the desirable workers are decreased. The sheets of foundation, as sent out by manufacturers of appliances, just fit inside the frame, and when fastened in the saw-cut of the top bar, leave a space at the bottom, which the bees will fill with drone-cells. When the time for supering arrives, the shallow frames need not be quite filled with foundation, as the bees, during the time of plenty, are busy secreting wax, which, if not used in making combs, would be wasted. In these shallow frames there will, therefore, always be a good proportion of drone-comb, from which the queen must be kept by a sheet of queen excluder being placed upon the brood-frames.

How to take Honey without being Stung.—First lay it down as a rule that honey is not to be taken from the brood-combs, then there will not be much fear of stings. All surplus should be stored in frames or sections placed above the brood combs, and if brace-combs are prevented, by using an adapting-board and queen excluder, the taking of surplus honey is a simple matter—of course, supposing it is not left on till late in the season. When it is decided to remove a full super, have ready a super-clearer—that is, a board to fit the bottom of the super, in which there is fitted a bee-trap. Gently prise up one end of the crate, and puff in a little smoke, then raise it slightly off the hive, and place the board beneath it. If this operation is quickly and quietly performed, it will not take two minutes, and hardly a bee will take wing, and rarely one attempt to sting. In an hour, more or less, generally less, the bees will have passed through the trap to the brood-combs, and left the honey to be removed at the bee-keepers leisure.

How should Frames Hang?—As you like, in some hives frames hang parallel with, in others at right angles to the entrance. Which is the better? If you take the opinion of the majority, decidedly the latter, as the most practical men in England, on the Continent, and in America, use that style only. In America it would be a difficult matter to find any other kind of movable comb hive. I have no doubt the preference for frames running from front to back is due to the fact that supering arrangements are simplified, manipulation of a limited brood-chamber is rendered easy, and complications, even in the hands of a novice, are not as likely with the tiering as with the long hive.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, and as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept in a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

THURSDAY, AUG. 20	Swansea Horticultural Society's Show.
MONDAY, AUG. 16	Fellington-on-Tyne Horticultural (two days).
TUESDAY, AUG. 17	Bournemouth Horticultural.
WEDNESDAY, AUG. 18	Shrewsbury Horticultural Fête: Deputation of the Royal Horticultural Society. Trowbridge Horticultural.
THURSDAY, AUG. 19	Horsham Horticultural.
FRIDAY, AUG. 20	Devon and Exeter Horticultural Co-operative Exhibition at the Crystal Palace.

SALE.

FRIDAY, AUG. 20	Imported and Established Orchids at Protheroe and Morris' Rooms.
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AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick. — 62°.

ACTUAL TEMPERATURES:—

LONDON.—August 11: Max., 71°; Min., 61°.

PROVINCES.—August 11 (6 P.M.): Max., 67°, at York Min., 57°, at Aberdeen.

WHATEVER may be the result of the great show to be held by the Shropshire Horticultural Society next week, it is certain that nothing that it can do in this way can confer upon the Society a title of the honour it has earned by the erection of a statue to DARWIN in the city near to which he was born, and where he was educated. We have often had occasion to point out and to lament the comparatively little value, so far as horticultural progress is concerned, of these exhibitions. We by no means under-estimate their value in certain ways, but it is clear that their influence on progress and development is very slight in proportion to the cost of time, labour, and money that they necessitate. We have not to discuss this matter now, our duty is to congratulate the Shropshire Horticultural Society on its enterprise, and to tender to its executive the cordial thanks of the horticultural community.

Old readers of the *Gardeners' Chronicle* will remember the interest DARWIN took in such matters as hybridisation, selection, and variation. They will remember his numerous contributions to the subject in our columns and elsewhere, and will have noted how modest he was with all his eagerness to obtain and diffuse information.

The two volumes on *The Variation of Animals and Plants under Domestication* teem with the facts supplied by horticulturists, not of numberless patient himself. He it was who of the older botanists

who looked askance at varieties and monstrosities, and had little sympathy with the patient labours of the florists. It was DARWIN who showed the immense importance to be attached to these variations, as affording evidence of the progressive development of plants and animals, and the causes which influenced them.

The general inferences from all these facts and observations were given to the world in the *Origin of Species*, published in 1859; but it was felt that it was necessary to supply the student with the facts upon which these inferences were drawn, and this requirement was fulfilled in the work on *The Variation of Domesticated Animals and Plants* before mentioned, a work which con-

natural science, placed the books under the of his impassioned oratory. Now, the general principle of evolution is universally admitted almost every department of human knowledge and a modern Bishop instead of binning it with becoming appropriateness spoken DARWIN as "one of the door-keepers of the vast temple of the universe who pointed to us new vistas, every one of them leading up to the throne of God."

Very appropriate also was the presence of Shrewsbury of Sir JOSEPH HOOKER, who, with HUXLEY, bore the brunt of the first attack. HOOKER has happily lived to see the once denounced doctrine universally accepted.



FIG. 30.—DARWIN'S STATUE.

(Erected by the Shropshire Horticultural Society.)

tains, up to the date of publication, the fullest general account we have on the variation of cultivated plants. That work is a veritable treasure-house of information on matters connected with the general principles on which horticultural practice was based.

It is curious for some of us to recall the exceeding bitterness with which DARWIN and his books were assailed at the time of publication. As DARWIN's single-minded love of truth, caution, freedom from dogmatic aggressiveness, and exceeding modesty became known, the absurdity of the charges brought against him became recognised; whilst his books have not only survived the attacks made upon them, but have become the text-books from which the new generation of naturalists have been educated. A bishop who was ignorant of

made the basis of study and research in departments of natural science.

The statue is in bronze, and is the work of Mr. MOUNTFORD, also a native of Shrewsbury. There is a great similarity in the pose of the figure to that of the fine statue in the hall of the Natural History Museum. For our illustration we are indebted to the kindness of the proprietors of *Knowledge*.

The Royal Botanic.

ON the ground that nothing concerning horticulture is without interest for us, we note the hopeful anticipations expressed at the annual meeting of the Royal Botanic Society, Regent Park. For years the Society has failed to live up to its title, and more attention has been paid to objects having little or no relation



FIG. 31.—STAIRCASE AT THE TOWN HALL, SHEFFIELD, ON THE OCCASION OF THE QUEEN'S VISIT. (SEE P. 109.)

than to science. Some excuse for this is afforded if financial success were the object, but it is not so, as frequent complaints are made of non-payment of prize-money or at least, of very long delays, and it is acknowledged at the meeting that the Society has a debt of £20,000!

Royal Horticultural Society, for only one period of its existence, followed a policy to that adopted by the Botanic Society, the result approaching total collapse. The policy was changed, a great improvement ensued, a fact of which we hope the Botanic will carefully take note. As to practical gardening, it appears, is in a state of confusion, with examinations and certificates, of value are certificates issued by such a body to be, unless it entirely changes its policy, and regains the respect of the horticultural community? The imitation is no longer to the horticultural Society, but to the Botanic, and we hope that the Botanic will not do that we do not want in London horticultural centres, and we hope that the Botanic will like competition in this matter. The two, the Royal Horticultural and the Royal Botanic Society, should be avoided as injurious to each. The renewal of the lease of the gardens is, so that there is some hope the garden may still have a useful life before it. It appears that the Woods and Forest Department, before acceding to the lease, required some assurance of the financial stability of the Society, and has been met by the raising of a guarantee fund, which is a practical, business-like, if rather unorthodox way of looking at matters. The chief object of such a Society has for the indulgence of the Government is surely not a matter of course; but depends on the record of the Society, or in the reasonable anticipation of the future, or in the provisions of the charter. The public will not object to being taxed for a useful or useful practical work; but will resent being asked to contribute to a garden that condescends to donkey-decorating and other entertainments—useful enough in their way, but beyond the province of a self-respecting, scientific society. There is no sort of reason to provide "Welcome Clubs" and other societies of various kinds, particularly if they are to pay for them; but, if they are to be, the Society should abandon its old name and get its title amended for one consistent with the objects it thinks fit to pursue.

COSSAGE AT THE SHEFFIELD TOWN HALL.—On the occasion of the visit of the Queen to Sheffield the newly-erected Town Hall was elaborately decorated with plants and flowers, an especially fine display being made on the grand staircase shown in our illustration, p. 107. Here were height, breadth, and the most seems to have been made of these by the floral decorators, Messrs. FISHER, of the Handsworth Nurseries, Sheffield, having a very satisfactory effect.

EXHIBITIONS AT HAMBURG.—At the recent International Exhibition held at Hamburg from August 3, the large Gold Staats Medal was awarded to Mr. CHARLES TURNER, Royal Botanic Garden, for 200 specimen Carnations in addition, an award of the large Gold Medal made for 250 varieties of cut Carnations, of each variety. An extra large Silver Medal also given for forty-eight blooms of dressed and a special prize of 500 marks for the display of Carnations in the whole exhibition. The cut blooms left London on the previous Saturday by the Hamburg mail and were landed at Hamburg on the

following Tuesday. The cut blooms left London on Wednesday evening, and reached Hamburg on Thursday evening, all arriving in excellent condition and very fresh. Such a performance establishes a record in Carnation exhibiting, and bears testimony to the spirited enterprise shown by the exhibitor. A portrait of Mr. H. Turner will be found on p. 103 of this issue.

NEW WINTER-GARDEN AT THE ANTWERP ZOOLOGICAL SOCIETY.—The "Palais des Fêtes" of this Society was inaugurated on July 26 by the King of the BELGIANS. Among the many sections composing the establishment, the Winter-garden must be mentioned—a fine building, but, if anything, too lofty. The future will show what can be done here with the plants. Meanwhile, I may mention some fine Palms and Tree Ferns. I would name, as important varieties, *Cocos Bonneti*, *C. chinensis*, *C. Weddelliana*, *Brahea Roezli*, probably the finest specimens in Europe; *Astrocaryum*, *Washingtonia robusta*, *Phoenix rupicola*, *Rhapis flabelliformis*, *Kentia Forsteriana*, *K. Moorei*, and other plants. I noticed *Cyathea medullaris*, *C. dealbata*, *Balanium antarcticum*, *Dicksonia squarrosa*, *Hemetelia Smithi*, *Alsophila paraguensis*, *Dicksonia Baptistei* (?), *Lomaria cycadifolia*, *Aralia elegantissima*, *Cycas revoluta*, and *Maranta zebra*. The arrangement of these plants is very successful. At the end of the garden is a fine grotto and fountain, and a rockery well



FIG. 32.—DARWIN'S BIRTHPLACE, THE MOUST, FRANKWELL, SHREWSBURY. (See p. 105.) (Taken from the Castle.)

stocked with plants, among them some pretty *Selaginellas*. To M. BLOCK is due the arrangement of this garden, and I would also mention in connection with it M. L. HOESTER, to whom much of the credit is due. *Ch. de B.*

AQUATIC PLANTS AT THE HAMBURG EXHIBITION.—An important section of this exhibition is that devoted to aquatic plants from warm regions, and grown in tanks fed with carefully-heated water. The Victoria regia has done well here, and one of its great leaves has been turned over to show its curious conformation. It is uncertain as yet whether the plant will bloom. There is also a fine collection of other water-plants, bog-plants, *Nymphaeaceae*, &c., mostly sent from the Hamburg Botanic Garden, some from the Brothers HARSTER, of Speyer-on-the Rhine. *Ch. de Bosschère.*

GREENHOUSE RHODODENDRONS.—Messrs. FISHER, SON & SIBBAY send us trusses of two new greenhouse Rhododendrons raised by them, which are of great beauty:—

Duchess of Portland has many-flowered trusses of rosy-pink flowers, with long white tubes. The tube is very slender, and measures about 45 mill. (1½ inch), expanding into a flat limb 35 to 40 mill., or about 1½ inch in diameter, with ovate lobes. Ten small globose green glands surround the base of the elongate cylindric ovary. The leaves are coriaceous,

ovate, oblong, tapering at each end with short thick petioles.

Duchess of Westminster has deep rose-coloured flowers, with relatively thick white tubes. The flower-tube 35 mill. (1½ inch) expands into a limb measuring about 5 cent. (2 inches) across, lobes broadly oblong, white-edged, and tipped with rose. The ovary is covered with scales, and surrounded at the base with ten greenish glands.

BORDER CARNATIONS.—Mr. JAMES CROMBIE, of Barrow-in-Furness, sends us several specimens of border Carnations remarkable for their free-flowering properties and vigorous habit. No. 1, labelled *Crimson-scarlet*, from its colour, is particularly noticeable; No. 4, "Terra-cotta," is buff, flaked with rose; No. 2, *Rose self*, is a well-shaped flower, of a lovely shade of rose. But it is impossible to particularise. It is enough to congratulate Mr. CROMBIE on the excellence of his strain.

HORTICULTURAL SCHOOL AT NAARDEN-BUSSUM, NEAR AMSTERDAM.—Our attention has been called to the training given to young men at the *Sempercrenses* Nurseries, which offer a good opportunity to young gentlemen desirous of learning horticulture, both practically and theoretically. The theory comprises:—Botany, botanical terminology, double book-keeping, commercial correspondence in Dutch, French, English and German, and landscape gardening. Fuller particulars on application to M. A. G. M. RICHARD or M. A. M. C. JONGKINDT CONINCK.

EXAMINATION ANSWERS.—In our last issue we gave some characteristic examples of what may be expected when candidates come forward without an idea of what is expected of them. Here is another sample, taken from the answers of a candidate desirous of obtaining a garden appointment:—"In some plants whose flowers have a flora tube the stamens are called Thrummide, or Pinnide, according as the anthers are below or above the upper end of the tube."

MESSRS. WM. FELL & CO. OF HEXHAM.—On Thursday, the employees of this firm of seedsmen and nurserymen were treated to a trip to the town of Berwick-on-Tweed, starting at an early hour in the morning from the town. Over sixty persons of both sexes participated in the trip.

ABBAY PARK FLOWER SHOW, LEICESTER.—An interesting event in connection with the Abbey Park Show last week, was the presentation of a valuable gold watch and chain to Mrs. J. BURN, wife of the much esteemed curator, in appreciation of her great attention and kindness to the horticultural exhibitors and friends. The presentation was made by Mr. ALFRED OUTRAM, F.R.H.S., who has acted as one of the judges since the commencement of their annual shows, now twelve years since. The presentation came as an agreeable surprise to the lady.

THE LONGEVITY OF SEEDS.—M. CHARLES NAUDIN contributes to the *Bulletin* of the Société Nationale d'Acclimatation de France a paper on "The Longevity of Seeds, and their Preservation in the Earth." Seeds, says he, are known to remain for an indefinite length of time, even for several centuries, in the ground without germinating, owing to atmospheric or other causes. M. NAUDIN instances, as a case of suspended germination, a packet of earth from the Sahara, which, spread over a flower-bed, and duly watered, was found to contain seeds of *Helianthemum*, which grew, and bore yellow flowers. The inference is, that an apparently barren region yet contains in its soil seeds which, were the climate to become more humid, would rapidly transform it to one of vegetable fertility and luxuriance. M. NAUDIN mentions, in further confirmation of his opinions, that in 1895 he received a few seeds from Gaboon packed in some of the soil of that place. This earth, less than two pounds in weight, was placed in a flower-pot, whence, in a fortnight, sprang twenty seedlings all belonging to the *Cucurbitaceae*. The stems and branches of these

... from 20 to 24 feet, and it is supposed that soil more carefully selected would give still richer results. In the many cases where plants cannot be brought to Europe in good order, where they die on the voyage, or are immature at their prime, it is suggested that a sample of the earth selected from some likely spot in their vicinity should be sent over in their stead, and might be found to contain fertile seeds of the species desired. If this, says M. NAUDIN, seems a proceeding based too much upon chance, like that of a fisher casting his net at a venture, this difference may be pleaded: the botanical collector is no more sure of finding what he seeks, but in all probability will obtain something new and acceptable. Finally, it must always be borne in mind how easily packets of earth can be transported from place to place without any attention on the journey.

MR. ALFRED SUTTON, J.P., OF GREENLANDS, READING, passed away on Saturday, August 7, at the ripe age of seventy-nine years. Mr. ALFRED SUTTON especially interested himself in floriculture and the "home" part of the work, whilst his brother was more particularly connected with the agricultural and seed-growing departments. Though naturally taking an interest in the affairs of his native town, Mr. SUTTON did not serve the town on the Town Council, his retiring disposition disposing him to refrain from public work. He, however, took the deepest interest in education, being a member of the School Board for fifteen years from its formation, when he was elected at the head of the poll. He was a warm supporter of missionary work, both at home and abroad, especially the Church Missionary Society. At the present time three sons are working as medical-missionaries in Quetta, Bagdad, and South Africa respectively. In fact, all religious movements, especially those established for the benefit of young men, were dear to him. He was one of the founders and chief supporters of the Reading Church of England Young Men's Christian Association. Three mission rooms, in populous districts of the town, were erected by him; also the coffee-house known as the "British Workman." He was a liberal subscriber to philanthropic societies, and was for many years a member of the Board of Management of the Royal Berkshire Hospital. His wife and ten children (seven sons and three daughters) survive him. Both Mr. ALFRED SUTTON, and Mr. MARTIN HOPE SUTTON, his elder brother, who founded the firm and who survives him, retired from business more than nine years ago (May 31, 1888), and they have no capital or other financial interest in the firm of SUTTON & SONS, which business they then made over to their sons, the present partners.

STOCK-TAKING: JULY.—Judging by the crowd at the counter of the Queen's Printers on publication-day, there must be an extensive demand for the Monthly Returns issued by the Board of Trade, and so one might imagine an effort would be made to have these issued without fail on a certain day in each month. Well, it might have been the excessive heat, or the Bank Holiday, but whatever was the cause, nearly a third of the month of August had passed away before the authorities issued the Returns for July. Since our last report the new American Tariff has become law, the German and Belgian Commercial Treaties have been "denounced," gold has broken out in a good many spots.

British Columbia, a great lock out and strike has come to pass at our own doors, and the weather notwithstanding, things political and social have taken quite a lively turn. Fortunately, here we have nothing to do with these things, though each and all of them have had—and will continue doubtless to have—an influence on British commerce and manufactures. Taking up the tale as told in the Returns, we find that the imports for July amount to £36,123,523, against £34,378,158 for the same period last year, or an increase of £1,745,365. A decrease is noted in four of the

sections, as follows:—Articles of food and drink dutiable, £101,256; tobacco, £116,905; chemicals, &c., £103,778; manufactured articles, £7845; miscellaneous articles, £115,110. The highest increase is that in raw materials for sundry industries and manufactures—£879,077. The following is our usual extract from the "summary" table:—

IMPORTS.	1896.	1897.	Difference.
Total value ...	£ 34,378,158	£ 36,123,523	+1,745,365
(A.) Articles of food and drink—duty free ...	11,867,615	12,443,071	+585,456
(B.) Articles of food and drink—dutiable ...	2,085,831	1,984,575	-101,256
Raw materials for textile manufactures ...	2,796,693	3,004,993	+208,300
Raw materials for sundry industries and manufactures ...	5,106,149	5,985,224	+879,077
(A.) Miscellaneous articles ...	1,164,810	1,049,700	-115,110
(B.) Parcel Post ...	66,504	15,469	-43,965

It is worthy of note that the total increase for the past seven months amounts to £10,681,073. Very striking indeed, and suggestive, are the figures relating to the imports of fruits and vegetables, which are as follows:—

IMPORTS.	1896.	1897.	Difference.
Fruits, raw:—			
Apples ... bush	103,252	68,444	-34,788
Cherries ... "	90,166	92,122	+1,956
Plums ... "	138,023	231,316	+93,293
Pears ... "	78,523	114,167	+35,644
Grapes ... "	20,770	167,529	+146,759
Unenumerated ... "	246,200	398,156	+151,956
Onions ... "	335,591	415,677	+80,085
Potatoes ... cwt.	109,811	409,332	+299,521
Vegetables, raw, unenumerated ... value	£194,618	£193,621	-£1,027

It would be waste of time and space to dilate on the "differences" noted—they carry their own lesson. In noticing the

EXPORTS FOR JULY,

the belief may be referred to, that capital will be solicited by our Canadian brethren for the developing of enterprise in that vast land, in the growth of which we are all interested; and it may not be inopportune to state that a belief is gaining ground amongst us that the Canadian bankruptcy laws require overhauling, and generally bringing up-to-date. Both the High Commissioner and the Premier are invited to give a glance at the subject, and soon. The figures relating to the exports foot up at £21,359,139 for July, 1896, against £21,501,452 for last month—or a gain of £142,313; but troubles at home and abroad have to be blamed. Still, we must be thankful for the increase, small though it be, in view of the fact that the decrease on the seven months amounts to over a million and a half sterling. There is one special decrease to be noted in the month's values—that of £965,491 in the section "Articles Manufactured and partly Manufactured"—viz., yarns and textile fabrics; the biggest increase is £683,077. Exports of food show an increase of £120,029. The total for the seven months shows a decrease of exactly £1,592,975.

PLANT PORTRAITS.

- ANELIA FLORIBUNDA, *Revue de l'Horticulture Belge*, July 1.
 ADONIA AMURENSIS, *Garden*, July 3.
 ERYTHRUS ELWENII, sp. nov., *Michell, in Revue Horticole*, June 16.
 EUGENIA GUAFIJI, André.—A myrtaceous plant, discovered in Uruguay by M. Ed. André. It produces edible fruit, and thrives in M. André's garden in Golfe Joan, Nice. *Revue Horticole*, July 1.
 GLADIOLUS TALL BLUE, *Bull. della Soc. Toscana d'Orticoltura*, t. 5.
 GLORIOSA SUPERBA, *Linnaeus, Revue de l'Horticulture Belge*, June.

GREVILLEA ALPENTRIS, *Meisner, Revue de l'Horticulture Belge*, July 1.

LEPTOSPERMUM SCOPARIUM VAR., *Garden*, May 29.

MELOCOTUS HUMILIS, *Suringar, Gart. Nijm.*, t. 1430.

PEONIA ALBIFLORA MAJOR, *Garden*, June 19.

ROSE FIAMETTA NABONNARD (Tea), *Le Moniteur Horticole*, June.

ROSE MADAME ANEL CHATELAIN (Hybrid Tea), *Revue Horticole*, June.

ROSE (Tea) MADAME PERRET DUCHER, *Garden*, June 2.

STENOCASTRA CONCINNA, *Garden*, July 10.

TETRAETHICA VERTICILLATA, *Huegel, Revue de l'Horticulture Belge*, June.

HOME CORRESPONDENCE.

SOIL AND THE DISEASES OF POT PLANTS.—Is not the "gardener in a hurry" responsible for many of the evils that accompany and afflict most grievously modern plant culture? Instead of obtaining his store of loam and peat a year or two before he requires to use them as potting material or for forming beds for Melons, Cucumbers, Tomatoes, Eucharis, Gardenias, Mushrooms, &c., the soils are carted in from the field or the moor, and with little or no previous mellowing in stack are employed, together with all the injurious spawn of fungus of various species, chrysalids, and grubs and eggs of insects, live roach and seeds of noxious plants capable of germinating, remaining in them. Is it a matter for wonder that the plants suffer at the root or top? When the writer of this note was a worker in a garden, one of the first jobs he was put to was the stacking of the loam. This was brought in from a strip of pasture at the south side of a cliff where the sheep and other kinds of farm stock delighted to find shelter from the bitter east and north winds of a northern maritime county. The soil was a strongish yellow loam, well saturated with the excrements of the animals, and, as a consequence, it was permeated with the roots of grasses and other plants. This soil was put into rectangular stacks about 5 feet wide and high, finished off with a peaked top, in order to cast off the rain to some extent. As the work of digging and stacking took place in open weather during the winter, the sods were usually moist throughout, and the heap, therefore, maintained its moisture to a certain extent for a year or longer. The turves were put together, grass and all, quite regularly, like brickwork; and when the building of a stack was finished, the sides were neatly shaved off with a hay-knife or sharp spade. The grass and the roots soon set up slight fermentation, engendering warmth in the stack, and brought about two things—the decay of the roots and the herbage, destroying most of the injurious insects, their eggs, and pupae; and those in which which survived the heat and the deprivation of air soon succumbed to starvation, for it was an article of faith with the head gardener not to permit living plants to exist on the sides or tops of the stacks, these being shaved off occasionally, and the shavings tucked into a hole made in one of the sides or at the top, and afterwards covered with sods. The writer has no recollection of noticing any of these diseases attacking either plants indoors or out, of which we hear so much at the present day, and he is of the opinion that they would be much less common if more care were taken in the preparation of the soil. Similar care was taken of all sorts of peat in use, only it was left longer in stack before being used for any purpose, unless it was when employed as a top-dressing, or an addition to the staple in planting American plants in the open air, for which purpose partially-decayed peat is to be preferred to that which is over-much decayed, much more sand can be used with it. Leaf-mould we really what its name implies, and not a partly-rotten lot of leaves. Pure leaf-mould, if kept on an elevated spot of ground on the north side of a wall, and when well decayed, that is in about three years, and protected from rain and snow, contains nothing that is inimical to plant life, but much that is particularly suitable as the food of plants. The same cannot, however, be said of that which is partially decayed, which may often contain the mycelium (spawn) of various dangerous saprophytic fungi, &c. of insects, &c. *Northerner*.

LILIAM LONGIFLORUM HARRISON—Your Clivedon illustration of this beautiful Lily reminds me of the singular beauty produced by it just recently in the garden of Stanmore, Kew Road, Richmond, where there was a long, thickly-planted row of it, and every plant in full bloom. Instead, however, of being drawn under glass, some 3 feet in height, the Stanmore

Lilies were but 20 inches in height. None the less, the flowers were of the finest and purest. The bulbs were planted in the spring in ordinary garden soil; they will be lifted when thoroughly ripe, and doubtless will produce as fine an effect next year. I had the exceeding pleasure a few evenings since, when calling at Stanmore to enquire after the welfare of one whom all who know him so much respect, and have so much missed, Mr. H. Herbet. I was rejoiced to find him out walking in his garden, though still in a very weak and much-suffering condition, yet happily much better than at any time since his attack of illness, several weeks ago. It was with some emotion, as we sat in his verandah and looked out upon the garden with the beautiful white, sweet Lilies in the foreground, I learned from him how much of pleasure he had been enabled to obtain from sitting quietly alone, and, as it were, holding communion with his flowers; for if not in language, at least in imagination, one seemed to hold converse with the other. What a delightful frame of mind is it which thus enables those who are afflicted still to obtain such happiness from their gardens and flowers! A. D.

THE SEEDING OF NARCISSUS.—A correspondent who made an enquiry concerning the seeding of Narcissus, will probably be glad to know that the seeding of many Narcissi is largely a matter of climate and soil, as well as of season. Cernuus seeds as freely as most white trumpets, all of which are somewhat shy and uncertain; Albicans might also be tried—in the writer's garden it produces seed with fair regularity. Few, if any, of the medio-coronates with high colour can be depended upon for seed, though many have efficient pollen, e.g., C. J. Beckhouse. But "Narcissus" will have to plant a variety of Narcissi, and observe the effect of his local conditions upon their fertility. Moreover, the parents (seed and pollen) which in theory should yield the finest seedlings, do not always do so in fact, as he will discover. Seedlings from the Narcissi which are finest in form and colour, commonly revert to inferior types; nothing but much experience will show the best elements to work with. G. H. E.

CROSS-BILLS.—I never remember at this season of the year such a visitation of strangers. A large family of cross-bills have taken possession of the tops of my Scotch Firs, and the havoc they make with the cones may be imagined, when I tell you that a full bushel of cones were picked up under one tree, the result of, I believe, only two days' feeding. Many of the cones seem to be dropped before they had opened them. Is this unusual? Charles Noble, Bagshot.

FRUIT-CULTURE.—I scarcely think that we can attribute (as a pleasant writer upon fruit-growing seems to do in your last issue) the sad failure of the fruit-crops this year to defects in cultivation. Cultivation, in all likelihood, has been the cause as usual; perhaps, upon the whole, improving, through the good advice of the many, who write about it, without trying it. But where is the fruit-crop? Gone—as it so often loves to be—to the happy land of promise. After forty years of gentle hope and humble vigilance over some 12 acres of fruit trees (planted and managed by myself), perhaps I may be allowed to offer a hesitant opinion about the very frequent failure, even in the warmer parts of this country. The spring-frosts and the chilly weather of our April and our May are chiefly to be blamed, perhaps, for the regular disappointment. But to me it appears that the present barren season, like one or two which I have known before, should be attributed mainly to the rather unusual weather of last year. After a very long drought we were visited by a month of almost incessant rain, the wettest month I have recorded in the entries of more than thirty years. This month, unfortunately, was September, the very period when our fruit trees should be engaged in forming and maturing the buds of produce for the following season. Instead of doing that at leisure, they rushed almost with one accord, after so long famishing, into wild growth and rapid extension, such as they should have accomplished in the summer. The result being that the bloom-bud—if there is any truth in my idea—was slurred and scamped, instead of being concreted and solidified. It is true that there was a fine show of bloom this year; but it was not steadfast, not hard and strong, as I have seen it, especially in 1894. Being largely congratulated upon the magnificent crops in store for me, I was obliged to express ill-mannered doubts; and, alas! the pea was not under

the thimble, as the British fruit-grower so often finds. The weather of the blooming-time was not propitious, but I have known a fair crop after much sharper frosts than we were favoured with this spring. R. D. Blackmore.

VINE BORDERS, INSIDE, COVERED OVER WITH BRICKS.—Twice only have I met with these; in each case I was not favourably impressed with the system. The borders were rather flat, and the entire surface was closely paved. The bricks in one case were green with lichen, and had a disagreeable appearance, and on lifting up one or two of them the soil beneath was found to be in a soddened state. Whether success or failure followed the practice, I am unable to say, but in the second instance the gardener told me he was far from satisfied with the results, and should not carry out the practice further. It seemed as if a good dressing of manure would be more beneficial to the Vines than the moisture retained and the warmth imparted by the bricks. Moreover, were the borders open to the air, there would be less probability of the soil getting into a sour condition. H. Markham, Margate.

HOLLAND.

At Amsterdam I visited the Zoological Garden of the Society "Natura Artis Magistra," wherein are some excellent collections illustrative of birds indigenous to Holland. There is a good aquarium also. The plants at the Zoological Garden of Amsterdam are not very important, scientifically serving chiefly to ornament the garden in summer and the houses in winter.

M. M. Groenewegen & Co. have an important establishment with many plants well cultivated, and a large seed trade. At their printing office is issued the journal *Sempervirens*, edited by M. H. Witte of Leyden.

The Society "Corona" does a large business in indoor plants and flowers.

A well-known amateur grower is Mr. C. W. R. Scholten, Jun., who has a good collection of Orchids and a fine specimen of *Livistonia rotundifolia*.

Near the last-mentioned establishment is the phytopathological laboratory of Mr. Willie Commelin Scholten, under the direction of Dr. J. Ritzema-Bos, under whom its value has already been proved.

At the Amsterdam Botanic Garden are some fine specimen plants: notably, *Encephalartos longifolius*, supposed to be over 1000 years old, and blooming every twelve years; a fine *Ptychosperma elegans*; many very good *Encephalartos Altensteinii*, Palms, and Cycads; *Doryanthes excelsa*, about to flower; *Macrozamia Denisoni*, with a white stem; *Dracena Draco*, *Cinnamomum dulce*, *Scindapsus pertusus*, with long adventitious roots; and a fine *Dicksonia antarctica*. The cultivation is not so good as might be desired. Ch. De Boscchère.

VEGETABLES.

BUNYARD'S EXHIBITION BEAN.

SOME little confusion was recently created in the minds of the members of the Royal Horticultural Society's Fruit Committee, by the sending to Chiswick from Exeter of a Long-pod Bean called Exhibition Long-pod. This, when seen by the committee at Chiswick, was assumed, both by resemblance and name, to be the same as Bunyard's Exhibition, and a previous award to that variety was confirmed. At the ensuing meeting at the Drill Hall, a dish of the Exeter variety was brought to the table, when it was presented as distinct. Why the sender should have selected a title already recognised in commerce is inexplicable, and the committee was compelled to ask that both "Exhibitions" should be grown at Chiswick next year. I have seen the whole of the Maidstone stock growing on Mr. Bunyard's seed-farm, and there I had ample proof that the original Exhibition is a splendid variety, very true, and carrying pods in abundance of great length, filled closely with beans. A. D.

NEW PEAS FOR 1897.

Probably no kind of vegetable has had more attention bestowed on it than the Pea, and fine varieties are so abundant that one might almost suppose that perfection had been reached. However, several varieties have come before my notice, four of which came from a well-known London seedhouse, which, after giving them a fair trial and made full comparisons with fine well-known varieties, I must consider to be improvements. Early Forcing is a splendid Pea, very prolific, quick, and of excellent flavour; Springtide is a fine early, white Pea, having a height of about 4 feet; St. Oysth, a dwarf, early Pea, of fine quality and very prolific; and Early Morn, one of the finest Peas that has yet come under my notice, either for general use or exhibition. It is a dwarf, marrow-fat Pea, with handsome, well-filled pods. Edwin Beckett, Aldenham House Gardens, Elstree.

LETTUCES: BUNYARD'S PERFECTION WHITE CÖS, AND CENTENARY CABBAGE-LETTUCE.

I have had no experience with either of these two varieties as winter Lettuces, but I can speak favourably of them as summer varieties. Perfection makes a large heart, is self-folding, crisp, and sweet flavoured. Centenary under good cultivation becomes a fine, solid head, and is of the best quality, keeping in good condition for a long time after being full grown. With regard to the production of good Lettuces in dry weather, and on light land, there is no better plan than that advocated in the *Gardeners' Chronicle*, March 20, p. 181, viz., by sowing the seed where the plants are to stand to mature. As the writer of that paragraph justly remarks, there are many kinds of vegetable seeds which might be sown where the plants are to stand, thus avoiding the labour entailed by transplanting, which would prove highly beneficial to those left, the tap-root travelling in a downward direction in search of moisture, and the plants would therefore not be so liable to suffer in dry weather as are transplanted plants. The ground planted with Lettuces should be well mulched in dry weather with short manure, or short grass, &c., and thoroughly moistened with manure-water. In this garden the ground is shallow, and overlies chalk, rendering a mulching and heavy watering of paramount importance when sowing the seeds. Lettuce, like many other kinds of vegetables, should in the hot months be cut early in the morning, and laid in a cool, damp place till wanted, which is a better practice than cutting them after the sun has shone fiercely on them for some hours. H. Markham, Margate.

BOOK NOTICE.

POT-POURRI FROM A SURREY GARDEN. By Mrs. C. W. Earle, with an Appendix by Lady Constance Lytton. (Smith, Elder & Co.)

THIS is a very pleasant addition to the large number of popular gardening books which have been issued since the fashion was set by Mr. Bright's *Year in a Lancashire Garden*, as reprinted from these columns. Their value lies in the stimulating influence they exert, and in the pleasure they afford, so that they fulfil a very useful purpose. The title of the present volume is an apt one, for the book is really one *de omnibus rebus et quibusdam aliis*. The author gossips pleasantly about the flowers in her garden and in her boudoir, and then rambles off to discuss methods of cooking Potatoes and Saleafy, the right way of bringing up sons and daughters, and the appropriate mode of furnishing the house. She shows a quite unusual but not very discriminative knowledge of books new and old, and is somewhat dogmatic in the expression of her opinions. To believe that *Stoever's Life of Sir Charles Linnaeus* "is the only biography of him ever written," is to ignore Pulteney, Maton, Haller, Sir William Jardine, Agardh, Macgillivray, Fée, and the writers of numerous minor biographical sketches. A reference to *Pritzel's Thesaurus*, ed. 2, p. 188, will supply the titles of the more important of these

of latter, named A. King, has large extra wide flowers majesta-coloured, with a white band across the lower petals; *Crimum Powellii* var. *alba*, flowers of which were shown in the same collection, was awarded a First-class Certificate, all except the anther is pure white (Silver Banksian Medal).

Messrs. J. VEITCH & SONS showed sprays of various hardy plants, such as *Ptelea trifoliata*, with bunches of seed-vessels and strong foliage; *Hypericum floribundum*, *Hydrangea quercifolia*, *Coprosma acerosa*, with small translucent lilac-tinted berries. *Clerodendron trichotomum*, *Colutea arborescens*, and *C. a. purpurea*, also *Eugenia Ugni variegata*, with pretty white and green foliage; and others.

Messrs. R. WALLACE & CO., Colchester, made a capital display with varieties of *Lilium auratum*, *L. speciosum*, *Gladiolus*, &c. (Silver Banksian Medal).

A yellow double-flowered variety of *Rudbeckia*, named Golden Glow, exhibited by Messrs. BARR & SONS, and others, was recommended an Award of Merit.

DAHLIAS.

It is admitted on all hands that Dahlias are doing remarkably well this season, making a generous growth, and promising fine blooms for exhibition. That they are early, there was ample evidence on this occasion. Several new Cactus varieties put in appearance, and it is satisfactory to note that the true Cactus type is being developed in the new forms in course of production.

Mr. J. STREWDICK, Silverhill, St. Leonard's, submitted several new Cactus Dahlias, among them *Miss Agnes Box*, bright red, flushed with a dark shade, large in size, with a tendency in some of the outer petals to become flat (Award of Merit). *Daffodil primrose*, a pale form of *Lady Penzance*, but a more refined Cactus type, novel and distinct, a real acquisition (Award of Merit). *Jubilee*, crimson, with a dark centre, a very promising dark variety that is pretty certain to obtain an Award during the season. *Major H. C. Wilson*, pale crimson, with dark centre, a true Cactus type; *Mrs. Fern Barker*, reddish-purple, shading to purple at the petal points; and *Miss Margaret Stredwick*, yellow, flushed with reddish-salmon.

Messrs. J. CREAL & SONS, Lowfield Nurseries, Crawley, had several new Cactus varieties, which will, no doubt, be seen in better condition later in the season. They were *Mrs. Quentin*, rich salmon-rose, deepening to rose, a distinct and highly promising variety; *King of Slam*, rich crimson-maroon, with a dark shading in the centre, true Cactus type, distinct, and very promising; *Profusion*, a Pompon-Cactus of the true character, bright purple, small, compact; *Mrs. Gilbert*, crimson, small, but promising, &c. They also had twelve bunches of Cactus varieties, three blooms of each, the most promising being *Cycle*, *Mrs. Pearl*, *Beatrice*, *Mrs. Kingsley Foster*, *Starfish*, *Fusilier*, &c. Also twelve bunches of single varieties, and the same number of Pompons.

Mr. J. WALKER, nurseryman, Thame, had sixty blooms of show varieties, of excellent quality for so early a period. Prominent among them were *Duke of Fife*, *T. S. Ware*, *W. Keith*, *John Stindill*, *J. Ashby*, *Warrior*, *Shirley Hibberd*, *Harrison Weir*, *William Rawlings*, *Perfection*, *R. T. Rawlings*, *J. Hickling*, *Horcules*, *Dandy*, &c.; also four dozen blooms of Cactus varieties, a few of the best being *Matchless*, *Fusilier*, *Lady Penzance*, *Earl of Pembroke*, *Miss A. Nightingale*, and *Beatrice* (Silver Banksian Medal).

Mr. S. MORTIMER, nurseryman, Farnham, had eighty-four blooms of show varieties, chief among them *Colonist*, *J. C. Vaughan*, *Goldfinder*, *J. T. West*, *Duke of Fife*, *Crimson King*, *J. N. Keynes*, *Mrs. Gladstone*, *R. T. Rawlings*, *Arthur Rawlings*, &c.; also sixty blooms of Cactus varieties, such as *Countess of Radnor*, *Mrs. Wilson Noble*, *Cycle*, *Starfish*, *Matchless*, *Lady Penzance*, and *Harmony*.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair, and Messrs. Jas. O'Brien (Hon. Sec.), F. Sander, H. M. Pollet, J. G. Fowler, T. Statter, W. H. Protheroe, H. J. Chapman, W. H. White, W. H. Young, J. Jaques, E. Bill, C. Winn, W. Cobb, J. Douglas, S. Courtland, and A. H. Smee.

Messrs. Jas. VEITCH & SONS, Ltd., Royal Exotic Nursery, King's Road, Chelsea, exhibited *Odontoglossum Pescatorei* *Harrisianum*, with a large branched inflorescence bearing numerous finely-formed flowers. The sepals are white tinted with pink, and having some clearly defined spotting of purple colour in the central part; the petals are white with some bright purple spots on the inner halves; the base of the lip around the yellow crest is also decorated with purple (Award of Merit). Messrs. VEITCH also showed two distinct forms of *Lælio-Cattleya* × *Clonia* (L.C. Warszewiczii ♀, L.C. × *elegans* ♂), the one with a labellum almost wholly light-purple coloured, and the other with base to the lip, tinged in part with yellow, and in which the interior portion was bright purple, a fine form of L.C. × *Callistoglossa ignescens* (C. Warszewiczii × L. purpurata); and *Cattleya* × *Atalanta* (Leopoldi × Warszewiczii).

Messrs. F. SANDER & CO., St. Albans, showed a small group in which were plants of the yellow *Sobralia xantholeuca*; the new *Sobralia Holfordi*, with fine rose-purple flowers, the front of the lip dark rose-purple, the base white changing to yellow in the centre; a fine example of *Odontoglossum Kramerii* with many flowers; *Odontoglossum Pescatorei* *conspicuum*, large in size, and with a broad lip, handsomely marked round the edge with dark purple; *O. Schleiperianum*, *O. crispum*, *O. Bictoneuse album*, *Cattleya Warszewiczii*, *Bifrenaria aurantiaca*, and *Cypripedium* × *Lawrencei* *Druryi*, with ivory-white flowers, tinged with emerald green, and marked with dark rose lines. By the parentage it should be C. × *Cybele*.

Messrs. HUGH LOW & CO., Clapton, were awarded a Bronze Banksian Medal for a group consisting of *Cattleya Gaekelliana*, C. Rex, C. Warszewiczii, C. bicolor, C. Eldorado alba, *Dendrobium venustum*, some fine forms of *Oncidium Papilio*, O. Jonesianum, O. Lanceanum, O. luridum, *Cypripedium* × *macropterum*, C. × *Chas. Canham*, C. *tonsum*, C. *Charlesworthi*, &c.

Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. W. H. White), showed a grand plant of *Platyclinis filiformis*, with ninety-four of its elegant spikes of yellow flowers gracefully around it (Cultural Commendation); *Epidenium* (Nanodes) *Matthewsii*, a species of small growth, and of the habit of *N. Medusa*, and with numerous greenish flowers tinged with rose (Botanical Certificate); the handsome *Eulophia guineensis*, with rose-coloured sepals and petals, and broad pink lip, with purple lines in the centre; and *Madevalla infracta purpurea*, with many flowers.

Sir FREDERICK WIGAN, Clare Lawn, East Sheen, showed two splendid spikes of *Lælio-Cattleya* × *elegans*, cut from the same plant; and some fine flowers of *Imelia crispae*, and *Madevalla macrura*.

ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow, Cheshire (gr., Mr. Holbrook), showed *Lælio-Cattleya* × *elegans* var. *Schroderiana*, in colour one of the darkest and richest yet observed; sepals and petals of a very dark purple colour; side lobes of the lip flesh-tinted and veined and tipped with purple, the broad, flat front lobe being of an intense dark ruby-purple hue. It was stated to have been purchased of Messrs. F. Sander & Co. under the name given (Award of Merit).

THOS. STATTER, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), showed the new blue *Dendrobium*, *Victoria Regina*, described in the *Gardeners' Chronicle*, June 19, 1897, p. 399; and which, in point of colour, is a decided acquisition, the outer two-thirds of each segment being dark purplish-blue (Award of Merit); and *Cattleya Dowiana magnifica*.

J. GURNEY FOWLER, Esq., South Woodford (gr., Mr. J. Davis), showed four hybrid *Cypripediums*, which seen separately may get mistaken the one for the other; but, seen together, give evidence of being very distinct! The finest was C. × *Callo-Rothschildianum*, with ivory-white sepals and petals tinged with rose, the upper sepal being closely lined, and the broad petals profusely spotted with a purplish-brown (Award of Merit); somewhat resembling it were C. × *Marsalium* (supercillare × *Rothschildianum*), and C. A. de *Larise* (Curtisii × *Rothschildianum*); the other was C. × *Neptune* (lo grande × *Rothschildianum*), except that the petals are narrower, more horizontally extended, greenish in tint, and irregularly blotched with dark brown. Mr. Fowler also showed a fine spike of the bright red *Renanthera Storci*.

G. W. LAW-SCHOFFIELD, Esq., New-Hall-Hey, Rawtenstall, Manchester (gr., Mr. Shill), sent a cut spike of *Lælio-Cattleya* × *elegans*, New-Hall-Hey variety, apparently intermediate between the Turneri and the Schilleriana section. The sepals and petals are white, tinted with lilac, the front lobe of the lip and tips of the side lobes of a very dark purple hue.

W. H. LUMDEN, Esq., Balmedia, Aberdeenshire (gr., Mr. G. Roberts), sent *Cypripedium* × *Balmedianum* (reputed parentage *Stoneli* × *Fairiesium*), which the Committee decided did not bear out the record. The inflorescence was three-flowered. The sepals and lip partook much of C. *Stoneli*, but the former bore more numerous dark lines; petals curved downward, and they were narrow, and greenish, with some chocolate-coloured lines and spots. Leaves light green, with dark green transverse lines, like some of the forms of C. × *Harrisianum*, and scarcely possible if the record were true.

REYNOLD YOUNG, Esq., Sefton Park, Liverpool (gr., Mr. Poyntis), sent *Cypripedium* × *Eyerannianum* var. *Hermione*.

R. I. MANSUR, Esq., Cambridge Lodge, Camberwell (gr., Mr. H. J. Chapman), showed *Lælio-Cattleya* × *Andreae* (L.C. × *elegans* × C. *bicolor*), a very distinct hybrid, with large flowers, sepals, and petals bluish-white, the lip being strongly characteristic of C. *bicolor*, the middle lobe very much elongated, and of a bright purple, margined with white.

Fruit Committee.

Present: Philip Crowley, Esq., Chairman, and Messrs. T. Francis Rivers, Jas. H. Veitch, A. F. Barron, J. Wright, Alex. Dean, Geo. Wythes, H. Balderson, W. Farr, F. Q. Lane, Jas. Smith, and G. Reynolds.

Messrs. GEO. BUNYARD & CO., Maidstone, were exhibitors of a collection of fruit commendable for the present: date of the season. Included were twenty-eight dishes of Apples, a number of which were varieties of *Codlins*, one dish of *Lawson Pear*, *Peach*, *Apricot*; also *Hemakirk*, *Moor Park* and *Blenheim Appricots*; *Peaches Hale's Early*, *Early York*, and *Early Grosse Mignonne* (Silver Knightian Medal).

A box of absolutely first-class fruits of the *Royal George*; *Peaches* was shown by Mrs. ASBOTT, South Villa, Regent's Park, N.W. (gr., Mr. Geo. Kell) (Cultural Commendation).

Messrs. J. VEITCH & SONS, Chelsea, exhibited fruits of a late Gooseberry named *Golden Gem*, from a cross between *Whitesmith* and *Antagonist*. The berries are large, rather long, yellow, thin in skin, and generally satisfactory (Award of Merit).

Mr. W. SMYTH, Basing Park Gardens, showed plants from the open of kidney Bean *Golia*, obtained from a cross between *Smyth's Seedling* and *Champion Scarlet Runner Bean*. The plants shown exhibited very marked productiveness, the pods being long, exceedingly numerous, and smooth.

Mr. WADDE, of the Cliveden Gardens, Maidenhead, showed three branches of *Blackberry "Kittatiny"*. Its productiveness was very remarkable (Award of Merit).

In the Apple and Pear competition 2nd prizes were awarded. These were obtained by Mr. Geo. WYTHES, Syon House Gardens, for *Jargonelle Pears* and *Lady Sudeley Apple*.

A capital collection of fruit from Lord FOLKE, Ruxley Lodge, Claygate (gr., Mr. J. W. Miller), contained fine dishes of *Figs Brunswick* and *Brown Turkey*; *Peaches Royal George*, *Alexander*, *Noblesse*, and *Violette Hative*; *Elruge Nectarines*, *Warrington Gooseberry*, *Morello Cherries*, a dish of *Mulberries*, *Cob* and *Filbert Nuts*, *Melons William Tillery*, three dishes of Apples, and a few bunches of Grapes not perfectly ripe (Silver Banksian Medal).

The Lecture.

Cross-Fertilisation of Florists' Flowers.

A paper upon this subject was given by Mr. J. DOUGLAS, who commenced by stating the importance of the work, and enumerating some of the results as evidenced in the *Auriculas*, *Carnations*, &c. When hybridisation had been effected between allied species, a certain degree of variation occurred, but this was abundantly increased when the hybrids were again crossed with each other. Thus was variation obtained quickest. Selection was much slower in producing results. Mr. Douglas remarked upon his experience with *Sonchelo cruentus*, stating that he had sown seeds from this plant for four years, and had obtained but little variation, but on making a cross between it and a garden *Cineraria* a very great variety resulted, and some of the plants were pretty. After referring to Dean Herbert, and reading a quotation from his writings to the effect that a plant was most improved after cross-fertilisation had been commenced, Mr. Douglas mentioned the names of the Revs. Horner, and Engleheart, and Mr. Martin R. Smith, each of which had done work, by the cross-fertilisation of *Auriculas*, *Narcissus*, and *Carnations* respectively, that would last for many years. Referring to *Rea's Flora* in 1676, Mr. Douglas found that there were at that day as many as 360 varieties of *Carnations*. It may surprise some of our readers to hear that there were as good bizarre and flaked *Carnations* 110 years ago as we have now. In proof of which Mr. Douglas exhibited a plate in the *Botanical Magazine* of that date (tab. 39) which represented as good a flower in form and colour as any known by present day florists. A letter from Mr. MARTIN R. SMITH was next read, from which the audience obtained an idea of the extreme care that is taken by this gentleman to prevent adventitious pollination when cross-fertilisation is intended. He also referred to the predominant influence of the pollen-bearing parent over the seedling. The effect of some remarks that were afterwards made by Mr. Douglas was that in the great majority of cases the pollen-bearing parent exercises a predominant influence, and this was the case even when *Germania*, a variety of unusual individuality, was used as the seed-bearing plant. There were, however, exceptions to this common rule.

Mr. DOUGLAS next urged the importance of the choice of parents, stating that the characteristics desired in the seedlings should be present in both, or, at any rate, one of these. The points of quality in most of the florists' flowers are given in *The Code of Rules for Judging*, published by the Royal Horticultural Society.

The necessity for removing the anthers from the plant to be cross-fertilised before these or the stigma have developed, was next alluded to, and when the stigma has so far developed as to be ready for pollination, the pollen from the plant it has been decided should be the other parent should be applied. This might be repeated once or twice if it be doubted that fertilisation has taken place.

Mr. Douglas did well to remind his hearers that a large number of seedlings thus obtained may contain very few valuable ones, stating that if there be one in five hundred there is cause for satisfaction. Is there a summit of excellence in a flower, beyond which we cannot go? asked Mr. Douglas; he answered it himself in the affirmative. Several instances of varieties of plants nearly half a century old, and that still remain the best of their section were given, including that of the grey-edged *Auricula George Lightbody*. Such flowers could be further developed probably upon other lines, but in the same direction improvement appeared impossible of attainment.

Dr. MASTERS, F.R.S., in proposing a vote of thanks to Mr. Douglas, referred to the circumstance that up to that day a statue to the memory of the late Chas. Darwin was being unveiled in Shrewsbury, his native town, and reminded the meeting of the great value of the investigations and experiments he made, in regard to the fertilisation of plants, and the significance attending the slightest variation observed in them.

Mr. A. DEAN offered a few remarks upon the subject of the paper; after which Mr. COLVILLE BROWN remarked that seedling *Carnations* that were single flowered in the first year, had become semi-double the second, and quite double the third year. He had carefully observed this himself, and when fully double the flowers were of good quality. Mr. JENKINS remarked in reference to the preponderating influence of the pollen bearer, that he had crossed two white *Carnations*, and in the seedlings there was nearly every colour represented, but few scarlets. He thought this evidence was against the theory.

Fruit.—The most important open class was the eighteen kinds, distinct, and here Mr. D. Gibbons, gr.

JOHNSTON, Esq., Kingston-on-Thames, was 1st, he having the Grapes, the Black Hamburgs especially; a Melon named Windsor Castle, Peaches, and Nectarines; the 2nd prize fell to Mr. J. HAYES for an almost equally good exhibit.

For a smaller collection of Fruit, with six kinds, open to the County only, Mr. J. HAYES was the winner of the 1st prize and the Silver Medal of the R. H. S.

Mr. J. WILSON, gr. to Mrs. MIDDLETON, Haselbech Hall, was 1st with three perfect, grandly coloured bunches of Black Hamburg Grapes; and for three bunches of White Grapes, Mr. JORDON, gr. to Lord ANNALTY was 1st with Muscat of Alexandria.

Quantities of prizes were awarded for all kinds of Hardy Fruits in season, Melons, &c.

For a collection of twelve kinds of Vegetables, Mr. DYMACK, gr. to B. WESTWORTH, Esq., Stoke Bruerne Park, was 1st, showing good Carrots, Turnips, and Celery; Mr. J. HAYES being 2nd.

Mr. J. KNIGHTLY had the best collection of nine kinds open to the County, taking also the Bronze Medal of the R. H. S.

The competition in the Amateur and Cottagers' Classes was keen, and the exhibits of more than ordinary merit.

THE MIDLAND CARNATION AND PICOTEE.

AUGUST 5, 6.—This is now the most important exhibition of Carnations held in the kingdom, for, as Birmingham stands midway between the London and Manchester districts, it is able to draw supplies of flowers from both; and it has a remarkably strong contingent of growers of its own. The show was not only an extensive exhibition, but one of much higher quality than could have been expected, it being feared that the hot weather of the previous few days had seriously affected the quality of the blooms. But it had not done so. The exhibition-house in the Botanical Gardens at Edgbaston is well adapted to display the flowers to the best advantage; it is light and airy, and then there is running through a considerable portion of it a background of Fuchsias and other flowers, plants which impart an added effect to the stands of cut blooms arranged in lines in front of them.

The leading class was for twelve Carnations, there being six exhibitors. The 1st prize was taken by Mr. J. EDWARDS, Blackley, Manchester, who had very fine blooms indeed of J. G. Hedderley, Mrs. Rowan, Robert Houlgrave, Sportsman, Sarah Payne, sent out about forty years ago, and still one of the best P.P.s. Master Fred Ellis Crossley, Lord Salisbury, Edward Rowan, Mrs. Gunn, Joseph Lakin, and a seedling. Mr. TOM LLOYD, florist, Todmorden, was 2nd with very good blooms, among them a brilliant C.B. named Medhurst's seedling, Gordon Lewis, Lady Mary Currie, Master Fred, J. Wormald & F., and Admiral Curzon.

There were fourteen stands of six blooms, Mr. C. F. THURSTON, Wolverhampton, was 1st with remarkably good blooms of Edward Adams, William Skirving, George Melville, Flemingo, Cristigalli, and Robert Houlgrave. Mr. A. R. BROWN, Birmingham, was 2nd.

In the class for twelve white-ground Picotees, seven stands competed. Mr. R. SYDENHAM taking the 1st prize with highly refined blooms of Ganymede, Mrs. Payne, Clio, Jessie, Pride of Leyton, Muriel, Esther, Favourite, Thomas William, Little Phil, Somerhill, and Scarlet Queen, a brilliant heavy scarlet-edged flower. Mr. T. LORD was 2nd, having, differing from the preceding, Brunette, Mrs. Wilson, Polly Brazil, Lady Louise, Mrs. Sharp, and Mary Anstie.

There were nineteen stands of six varieties, Mr. A. W. JONES, Handsworth, Birmingham, being placed 1st with Little Phil, Mrs. Openshaw, Muriel, Madeline, Somerhill, and Heart's Delight. Mr. T. W. GOODFELLOW, Walsall, was 2nd; and Mr. C. HEAD, Hilden Bridge, 3rd.

Yellow grounds and fancies, both increasingly popular sections, were fully and very nicely represented. There were ten stands of twelve blooms, Mr. A. W. JONES taking the 1st prize with grand flowers of Voltaire, The Dey, The Gift, Cardinal Wolsey, Geo. Cruikshank, Xerxes, Harlequin, Eldorado, Ladas, and Golden Eagle—a very fine selection indeed; Mr. R. SYDENHAM was 2nd, his finest blooms were Yellowhammer, Monarch, Virgo, London, and May Queen; Mr. A. R. BROWN was 3rd with a stand which a very few years ago would have distanced everything.

There were fifteen stands of six blooms: Mr. C. F. THURSTON was 1st with Eldorado, Voltaire, Yellowhammer, Golden Eagle, Mrs. Douglas, and Cardinal Wolsey; Mr. R. C. CARTWRIGHT, Selly Oak, was 2nd.

The best stand of six yellow-ground Picotees came from Mr. A. W. JONES, who had in very fine character Voltaire, The Gift, May Queen, Golden Eagle, Xerxes, and Mrs. R. SYDENHAM; Messrs. THOMSON & Co., Sparkhill, Birmingham, were 2nd, with The Gift, Voltaire, Eldorado, Golden Eagle, Ladas, and Mrs. Douglas.

The selfs were, as is usual, a striking feature, as they not only have soft tints in some flowers, and deep and brilliant ones in others, but they also afford sharp contrasts of colour. Out of twelve competitors, with the same number of blooms, Mr. A. R. BROWN was 1st with Britannia, Little John, Mrs. Eric Hambro, Bendigo, deep purple; Braw Lass, Her Grace, Hayes' Scarlet, Germania, King of Purples, Lady M. Currie, Nabob, and Topsy; 2nd, Mr. R. SYDENHAM, some of the most striking blooms, in a very fine stand, being Mrs. Rowan, Britannia, Her Grace, Theodore, a beautiful sweet scented heliotrope-tinted self; Percy and Germania.

There were fourteen stands of six selfs, Mr. A. W. JONES

taking 1st prize with excellent blooms of Fiery Cross, Britannia, Mrs. E. Hambro, Sea Gull, Miss Audrey Campbell and Germania; 2nd, Mr. C. F. THURSTON.

Then followed five classes for varying numbers of flowers shown without paper collars, and with a minimum of dressing, each flower staged singly in bottles with a certain length of stem, and confined to a given space of tabling; these classes brought a great many blooms together, many were seedlings, most unnamed, but they were scarcely effective, and beyond forming a mass of bloom, it is difficult to say what object-lesson they served. The blooms, which, were of good size and symmetrical, fresh and bright, won the prizes. If these classes are continued in the schedule, greater space should be afforded them. In addition there were four classes for undressed border Carnations cut with long stems, buds and foliage; in some of the classes five sprays were required, in others three. Here the varieties were mainly seedlings, but few were named; the collection which took the leading prizes were of a promising character, but some flowers were staged which brought little credit to the exhibitors. These classes urgently need some revision in the future.

In the various classes for single blooms, a very large number were staged. Carnations: Robert Lord and R. Houlgrave were the best S.B.'s; C.B.'s, J. S. Hedderley and Master Fred; P.P.B.'s W. Skirving and Sarah Payne; S.F.'s, Edred and Sportsman; R.F.'s, Seedling from T. Lord; P.F., Gordon Lewis. Picotees: H. Red E., Ganymede and Ne Plus Ultra; L. Red E., Thomas William and Mrs. Gorton; H.P.E., Mrs. Openshaw and Muriel; L.P.E., Pride of Leyton and Mary; H. Rose E., Madeline and Lady Louise; H. Scarlet E., Mrs. Sharp and Scarlet Queen; L. Ro. E., Favourite. Selfs and Fancies: White, Mrs. Eric Hambro and Mrs. Lee; Yellow, Germania took the first three prizes; Pink, Mrs. T. Halliwell; Crimson, Topsy and Negress; Y.G. Picotee, Mrs. R. Sydenham; Fancy, Voltaire and Monarch. Premier Flowers.—Carnations: Biarritz, Robert Houlgrave, S.B., from Mr. J. EDWARDS; Flake, Gordon Lewis, P.F., from Mr. R. SYDENHAM. Picotees: H.E. Ganymede, Red E., from Mr. R. SYDENHAM; L.E., Somerhill, P.E., from Mr. A. W. JONES; Yellow Picotee, Mr. Douglas, from Mr. C. F. THURSTON. Self: Her Grace, bluish, from Messrs. THOMSON & Co. Fancy: Voltaire, from Mr. A. W. JONES.

Certificates of Merit were awarded to the following new varieties:—L.P.E. Picotee Harry Kenyon, from Mr. J. WITHAM; Medium R. E. Picotee, Grace Ward, and R.F. Carnation Mrs. R. Lord, both from Mr. T. LORD.

Some classes included floral arrangements with Carnations, and several shower-bouquets were staged, made up of Carnations and appropriate foliage. Mr. C. BLOK, gr. to M. R. SMITH, Esq., Hayes Common, Kent, took the 1st prize with one that commanded general admiration; Mr. W. T. GUNN was 2nd.

Sprays and button-holes were in plenty. The best table arranged with Carnations and foliage came from Miss B. MAYELL, of Acock's Green; as there were seven of these tables, and all were good, they had a very pleasing effect.

Bunches of Sweet Peas were a charming feature. Prizes were offered for nine bunches of two dozen or so sprays. The best came from Mr. B. SYDENHAM, whose leading varieties comprehended some of the best grown.

Mr. H. ECKFORD, of Wem, offered prizes for twelve bunches, and several collections of leading varieties were staged. Then there was a class for an epigone of Sweet Peas; several were staged, some of which were very pretty.

The Society's Challenge Cup, won twice in succession by Mr. ROBERT SYDENHAM, now becomes his property; and the Turner Memorial Cup is now the property of Mr. A. W. JONES.

The Botanical Society's Silver Medal was awarded to Mr. J. H. WHITE, Worcester, for a very fine bank of cut flowers; the Silver Medal to Messrs. W. & J. BIRKENHEAD, Sale, for a very fine collection of Ferns; to Mr. B. R. DAVIS, Yeovil, for some superb Begonias; to Messrs. HENNETT & Co., Solihull, for a table of plants and flowers of excellent quality; and to Mr. HENRY ECKFORD, Wem, for one of his unique collections of Sweet Peas. A Bronze Medal was awarded to Mr. W. T. GUNN, Nottingham, for a collection of flowers.

MAIDENHEAD HORTICULTURAL.

AUGUST 10.—The twentieth exhibition of the above Society was held in the grounds of ARCO GOLD, Esq., Ives Place, on the above date. The entries were scarcely as numerous as on some former occasions, although the quality of the exhibits generally was of a high standard of merit. The leading groups were nearly perfection, and left little to be desired, being bright and effective, while fruit and cut flowers were very good, and vegetables in the special classes were excellent. Specimen plants were poorly shown, excepting Ferns. Collectively, the show was a very good one, but there seemed to be a lack of local enthusiasm, and was poorly patronised during the afternoon and evening, and evidently something more than a purely horticultural exhibition is required now-a-days to draw the masses.

Groups.—In the class for the largest group, 12 feet by 10 feet, the competition was keen, and so close were the two leading exhibits, that the judges awarded them equal 1st prizes. There seemed to be an opinion, that was very generally shared by the observers, that the group put up by Mr. D. PHILLIPS, gr. to A. N. GILBEY, Esq., Cookham, should have taken precedence, being decidedly more lightly arranged than that of Mr. AITKEN, gr. to Colonel MERRICK, Riching's Park, Slough. The latter, had

some good *Pancreatium* in his group, which appeared to have considerable weight on the decision, although his white pyramidal *Campanulas* were very poor. Mr. PHILLIPS' group had a central *Coccos Weddelliana* on a mound of *Adiantum*, plants of the latter also forming the groundwork; at each corner there stood a handsomely coloured *Croton*, while *Oncidium flexuosum* and *Inoum* were used very effectively, other plants used being *Francoa*, *Gladolus*, *Campanula*, *Eulalia*, *Dracena Sanderiana*, and *Caladium*. For the smaller groups measuring 7 feet by 6 feet, Mr. Fulford, gr. to D. LAMBERT, Esq., Cookham, was a good 1st; 2nd, Mr. J. W. Richardson, gr. to G. HARRIS, Esq. Mr. Fulford was 1st for excellent table plants, in which there was a strong competition.

For twelve handsome foliage plants, the same exhibitor was an easy 1st, having finely-coloured half specimen *Codiaeums* (*Crotons*) *superba*, *Bumaine*, *Alphurthea*, and Mrs. Dorman; *Dracenas* A. Laing and *superba* among his best plants. Mr. AITKEN was 2nd. The latter exhibitor was 1st for six stove and greenhouse plants, and also one specimen foliage and one flowering plant, with the latter winning easily with a large and finely-flowered *Ixora Williamsii*; Mr. PHILLIPS being 2nd, with a fine *Eucharis grandiflora*; and with a foliage plant, Mr. Wood, gr. to Lord Boston, Hedsor, was 3rd.

The exhibits of Ferns were good. For six stove and greenhouse, Mr. AITKEN was 1st with fine plants, among others, of *Microlepia hirta*, *Davallia Mooreana*, *D. filifolia plumosa*, and *Adiantum Farleyense*; 2nd, Mr. Fulford.

Mr. PHILLIPS was the only exhibitor of six small Pelargoniums with grandly trained and bloomed plants, 8 feet or more in diameter, that well deserved the award, a 1st, that was given. Mr. Paxton, gr. to the Hon. C. I. LEAY, Taplow, stood in a similar position with six *Fuchsias*, and was awarded the 1st prize.

Fruit.—The quality in general was good, although in some classes the competition was not keen. Mr. Goodman, gr. to Miss HAMMERSLEY, Abney House, Bourne End, was a good 1st for six dishes, with Muscat Grapes, Dagmar Peaches (finely coloured), Brown Turkey Figs, Hero of Lockinge Melon, Lord Napier Nectarines, and Kirke's Plums; 2nd, Mr. AITKEN.

For four dishes Mr. Johnson, gr. to A. GILLIAT, Esq., Stoke, Slough, was easily 1st with fine Madresfield Court Grapes and Humboldt Nectarines as his best dishes; 2nd, Mr. PAXTON. The latter exhibitor was 1st for four dishes outdoor grown with old Windsor Pears, Rivers' Early Peaches, Morello Cherries, and Moor Park Apples; Mr. Aitken 2nd.

In the four Grape classes, Mr. F. Cole, gr. to Sir G. RUSSELL, Swallowfield, Reading, took all the 1st prizes with fine bunches, although none of the Muscats were well coloured; in this class Mr. Fulford was 2nd, also with fine bunches, but not ripe.

Mr. GOODMAN was 1st with a fine dish of Peaches, highly coloured; 2nd, Mr. JOHNSON. Mr. GOODMAN was also 1st with a fine dish of Lord Napier Nectarine; 2nd, Mr. COLE.

Melons were not of high quality either in the scarlet or green-fleshed classes; for the latter, Mr. PAXTON received the 1st award.

Mr. GOODMAN received a 1st prize for a fine and ripe dish of highly-coloured Mr. Gladstone Apples.

Vegetables in collection and otherwise were very fine, special prizes for collection of six varieties being offered by Messrs. Sutton, Carter, and Webb & Sons. In the first mentioned competition Mr. GOODMAN was 1st, having New Intermediate Carrot, Satisfaction Potato, Autocrat Peas, Al Onions, Perfection Tomato, and Autumn Giant Cauliflowers; 2nd, Mr. RICKARD. Mr. W. Davis, gr. to H. Adams, Esq., and Mr. C. Young, gr. to the Rev. S. Cony were each 1st respectively in the two following collections with fine produce.

Miscellaneous exhibits were numerous and good. Mr. C. TURNER, Slough, had very fine boxes of cut Roses, Dahlias, and herbaceous flowers. Messrs. VETTON & Sons, Ltd., a large and varied collection of herbaceous flowers and annuals, including *Asclepias tuberosa*, *Phyllis capensis*, *Tritomas*, *Pentstemon* in variety, *Delphiniums* and *Gallardias*. Mr. A. WADDS, gr., Oliveden, sent a magnificent plant of *Peristeria elata*, with nine spikes of flowers, and a collection of Peaches. Mr. ROSE OWEN a collection of plants, with wreaths and other floral designs. Mr. E. F. SUCH, herbaceous flowers, with handsome wreaths, crosses, and bouquets in variety. Mr. W. BROUGHTON a group of decorative plants; and herbaceous flowers from Mr. H. DEVERILL, Banbury.

MARKETS.

COVENT GARDEN, AUGUST 12.

PLANTS IN POT.—AVERAGE WHOLESALE PRICES.

	s. d. c. d.		s. d. c. d.
<i>Adiantum</i> , per doz.	4 0-12 0	Foliage plants, doz.	12 0-25 0
<i>Aspidistra</i> , per doz.	12 0-20 0	<i>Fuchsia</i> , per doz.	4 0-6 0
— specimen, each	5 0-15 0	<i>Heliotropes</i> , dozen	5 0-4 0
<i>Asters</i> , various, per		<i>Hydrangea</i> , per	
doz.	2 5-5 0	dozen	8 0-10 0
Cockscombs, dozen	2 0-4 0	<i>Liliums</i> , various,	
<i>Coleus</i> , per doz.	3 0-4 0	per dozen	12 0-18 0
<i>Companula</i> , p. doz.	4 0-9 0	<i>Marguerites</i> , p. doz.	4 0-9 0
<i>Dracenas</i> , each	1 0-7 6	<i>Mignonette</i> , p. doz.	4 0-6 0
— various, p. doz.	12 0-24 0	<i>Palma</i> , various, ea.	2 0-10 0
Evergreen shrubs,		— specimens, ea.	10 0-24 0
in variety, doz.	6 0-24 0	<i>Pelargoniums</i> , per	
Ferns, small, doz.	1 0-2 0	dozen	6 0-10 0
— various, doz.	5 0-12 0	<i>Rhodanthus</i> , dozen	4 0-6 0
<i>Plus platicus</i> each	1 0-7 6		

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Dessert, in variety, p. bush. 8 0-9 0	Grapes, Muscats, selected, per lb. 2 6-3 0
— Culinary, in variety, per bush. 4 0-6 0	— Muscats, 2nd quality, per lb. 1 0-1 6
Cherries, Morellos, per lb. punnet 1 0-1 6	Melons, each ... 1 9-2 6
Figs, per doz. ... 1 0-2 0	Nectarines, selected fruit, per doz. 6 0-8 0
Grapes, Gros Colmar, per lb. ... 1 6-2 0	— Medium, p. doz. 3 0-4 0
— Alicante, p. lb. 1 3-1 9	— Seconds, p. doz. 1 6-2 0
— Hamburgs, selected, per lb. 1 6-3 0	Peaches, selected fruits, per doz. 6 0-8 0
— 2nd quality, per lb. ... 1 0 —	— Medium, per doz. ... 2 6-3 0
— Muscats, "Canon Hall," p. lb. 4 0-5 0	— Seconds, per dozen ... 1 6-2 0
— Channel Islands per lb. ... 10-1 0	Pears, ½ bushel ... 3 6-4 0
	Pine-apples, St. Michael, each ... 5 0-8 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, p. 12 blooms 2 0-4 0	Mignonette, per doz. bunches ... 2 0-4 0
Asters, 12 bunches 2 0-4 0	Myosotis, or Forget-me-not, 12 bunch 1 6-3 0
— French, 12 bun. 6 0-12 0	Orchids:—
Bouvardias, per bn. 0 4-0 6	Cattleya, 12 blms. 9 0-12 0
Carnations, per doz. blooms ... 0 9-2 0	Odontoglossum crispum, 12 bn. 2 0-4 0
— per doz. bun. 4 0-6 0	Pelargoniums, scarlet, per 12 bun. 3 0-6 0
Corn Daisy, per doz. bunches ... 1 6-2 0	— per 12 sprays ... 0 4-0 6
Cornflowers, per doz. bunches ... 1 0-2 0	Pyrethrums, 12 bn. 1 6-2 6
Eucharis, per dozen 2 0-4 0	Roses, Tea, per doz. blooms ... 0 6-1 0
Gardenias, per doz. blooms ... 2 0-4 0	— yellow (Marechal), per doz. 1 6-4 0
Gladioli, various, per doz. bunches 4 0-9 0	— red, per dozen 0 9-1 0
Lilium Harriet, per doz. blooms ... 2 0-3 0	— pink, per doz. 1 0-2 0
Lily of the Valley, dozen sprays ... 1 0-2 0	— Safrano, p. doz. 1 0-2 0
Maidenhair Fern, per 12 bunches ... 4 0-8 0	Roses, per dozen bunches ... 2 0-4 0
Marguerites, per 12 bunches ... 2 0-4 0	Stephanotis, dozen sprays ... 1 6-2 0
	Sweet Sultan, per dozen bunches ... 1 0-2 0
	Tuberose, 12 blms. 0 3-0 4

ORCHID-BLOOM IN VARIETY.

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. ... 2 0 —	Mushrooms (Indoor), per lb. ... 0 6-1 0
Beans, Broad, per bushel ... 1 6 —	Peas, per bushel ... 2 0-4 6
— French, per bushel ... 2 0 —	Salad, small, per doz. punnets ... 1 6 —
— Scarlet Runner, per bushel ... 2 6 —	Tomatoes, selected, per doz. lb. ... 4 0-4 6
Cucumbers, home-grown, select., per doz. ... 2 0-2 6	— Medium, do. ... 2 6-3 0
— 2nds, per dozen 1 0-1 6	— Seconds, do. ... 2 0 —
	Vegetable Marrows, per dozen ... 1 0 —

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (–) the Mean for the week ending August 7.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.			
0	6 +	135	0	+ 101	– 8	130	22.3	24
1	6 +	146	0	+ 75	+ 12	119	17.0	39
2	5 +	150	0	+ 130	– 78	106	13.0	66
3	5 +	167	0	+ 227	– 124	105	12.7	68
4	6 +	167	0	+ 205	– 115	104	15.8	69
5	5 +	172	0	+ 277	– 180	96	15.7	60
6	7 +	157	0	+ 122	– 21	128	23.6	44
7	7 +	171	0	+ 203	– 92	120	17.7	59
8	5 +	160	0	+ 290	– 138	1	122	23.8
9	5 +	145	0	+ 88	+ 8	137	23.3	33
10	5 +	153	0	+ 201	– 57	1	129	24.0
* 4	4 +	162	0	+ 344	– 80	1	131	19.4

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; *Channel Islands.

TRADE NOTICE.

MR. H. W. PITCHER, lately head-gardener at Allbury House, Surbiton, has taken over the management of the Surbiton Nurseries.

NOTICES TO CORRESPONDENTS.

BEECH: *Elm Park*. The tree is badly affected with white scale (*Adelges fagi*). The case has gone too far to be remedied. It will be better to take the tree down, strip off the bark and burn it.

BLACK CURRANT BUD-MITE: *R. H.* No cure, so far as we know of at the present; cut off and at once burn every affected shoot.

BOOKS: *X. Hardy Herbaceous and Alpine Flowers*, by William Sutherland (published by Blackwood & Sons, Edinburgh and London); Robinson's *English Flower Garden. Amateur*. The most modern manual on ornamental shrubs is A. D. Webster's *Hardy Ornamental Flowering Trees and Shrubs*, published at the *Gardening World* office, 1, Clement's Inn, Strand, W.C. A larger work is Augustus Montgredien's *Trees and Shrubs for English Plantations* (J. Murray, Albemarle Street, Piccadilly); but having been issued in 1870, it is probably out of print, and only to be met with at old book-shops.

BOUVDIAS: *A. T. Ewell*. The plants having grown too large for your frame, will take no harm if stood outside, on or in a bed of coal ashes or clean fine gravel till the end of September. As they are inclined to flower, you may pinch the stronger shoots once more, taking care to keep the plants gently moving for four weeks longer.

CHRYSANTHEMUM, TOPS OF SHOOTS INJURED: *F. G. O.* The work of earwigs. Trap them in Bean straw or pots filled with hay, emptying these every day, and destroying the earwigs. *E. M.*

COVERING THE BUDS OF ROSES WORKED LOW DOWN ON THE STOCK: *Inquirer*. Before covering the bud with the soil scraped away from the collar, you should wait till it has taken. We should suppose that there not being enough iron in the soil to be injurious to the Rose-stocks, it would not be injurious to the bud when covered with it. Six inches deep seems to us to be a rather excessive depth at which to insert the buds on any kind of stock. The treatment of La Grifferaie and Manetti stocks would be identical as regards the budding. A better union takes place if the wood is removed from the shield.

CUCUMBERS TURNING YELLOW, AND DYING FROM THE LOWER END UPWARDS: *J. Holt*. We agree with you that unsuitable, ill-prepared soil, and rank manure, with perhaps not enough porous material mixed with the loam, &c., are accountable for the mischief. It seems to us to be a very unwholesome kind of soil that was used, and you cannot do better than throw it out, obtain fresh sweet loam and decayed manure, make the bed 6 inches thick at the first, and have a fresh start with new plants. The manure should not exceed one-quarter of the whole, and if the loam be of a very heavy nature, put something with it—say, burnt clay (ballast), broken sandstone or brick-rubbish, coarse sand, or charcoal in pieces as large as Filberts. See that the water can pass freely away, and when the roots appear on the surface of the soil, top-dress it to the depth of an inch, and not more, with loam and horse-droppings, Thomson's Vine-manure, fish-manure, or a little Peruvian guano, sheep-droppings, pigeons' and chickens' dung, in a decayed state—any of them in moderation, but not more than one of them. In applying these top-dressings, place them thickest near the plants, so that the surface slopes away from the latter. Be sparing with the water-can till the soil gets filled with roots, and do not crop heavily.

ELRUGE NECTARINE FRUITS INJURED: *J. S., Swansea*. Caused by lack of ventilation when the sun is shining with full force on the house; in fact, the fruits were "scalded," in garden parlance.

FERNS FOR MODEL GREENHOUSE: *Fernist*. Your house is so small, in fact, merely a Fern-case, that but a very small collection can be accommodated, and we give you the names of a few suitable species, viz. *Adiantum tinctum*, *A. capillus-veneris*, *A. cuneatum*, *Asplenium marinum*, *As. flabellifolium*, *As. viviparum*, *Cystopteris tenuis*, *Davallia bullata*, *Doodia aspera*, *Gymno-*

gramma chrysophylla, *Laucheana*, *Hymenophyllum*, any of the species, *Lomaria gibba*, *O. auratum*, *Pteris cretica albo-lineata*, *hymenophylloides*, and *Trichomanes radicans* Killarney Fern.

FRUIT-TREES FOR A WEST WALL: *G. & S.* Plums: Jefferson's, Kirke's, Reine Claude d'Alsace, Reine Claude du Comte Atthem, Early Fat De Montfort, Guthrie's Late Gage, as varieties; and Diamond, Pond's Seedling Belle de Septembre for cooking. Pear: gonelle, Swan's Egg, an old, nice-eating, and variety, too much neglected; Thompson's Christen, Beurré Superfin, Fondante d'Alsace, Gratioli, Seckel, Brown Beurré, Doyenné B, Conseiller de la Cour, Beurré Bosc, Be Fouqueray, Baron de Melo, Glout Morve rondeau, Beurré Diel, B. d'Aremberg, Chat Marie Benoist, Nouvelle Fulvie, Ne Plus, and Doyenné d'Alençon. Peaches: Dagu Hogg, Gosbawk, among new varieties; an older, Barrington, Belle Beauce, Grosse Michel among old ones. Nectarines: Improved D Humboldt, Lord Napier, Rivers' Orange wick Elruge, and Victoria. Cherries: B de Schrecken, B. Noir de Schmidt, Elton d'Heidelinger, Black Tartarian, May Duke, and Archduke.

LABURNUM TREES IN GRAZING-LAND: *G.* safe trees to plant unless the area covered by branches is protected by a high fence, the plant, especially the seeds, being more poisonous when eaten.

MINING GRUB IN MARGUERITES: *A. B. C.* Cut burn all the badly mined leaves, and squeeze maggots, which may be found at the end galleries they have made in the other leaves, the thumb nail without bruising the leaf than is necessary. Quassia water and a soot-water, or soot applied dry will keep from laying its eggs on the leaves.

NAMES OF PLANTS: *Correspondents not in this issue are requested to be so good as send the following number.*—*H. Cleaver*. *sphaerocephalum*, *L.*—*A. S.* *Cattleya* *Lea Hortus*, 1, send in flower; 2, *Pellionia* *Day* 3 and 4, *Pellionia pulchra*; 5, *Fittonia* (*Gy chyum*) *Pearcei*.—*H. K.* *Oncidium* *pra* supposed natural hybrid between *O. Gardi* *O. dasytyle*; and *Mormodes pardinum* var. —*H. B.* So far as we can judge by see barren frond only, the Fern sent is *Oncol bilis*. We would like to see fertile and fronds of it again.—*R. B.* Specimen withered. It appears to be a pale variety common Broom.—*G. W. F.* *Alnus cord* *Naples Alder*, a good town tree.—*W.* *Clematis flammula*; 2, *Tecoma jasmino* *Picea sitchensis*; 4, *Leucothoe Cates* *Ylnus imperialis*; 6, *Lysimachia ciliata* Apparently a seedling variety of *G. draco*

NYMPHAEA LEAVES: *J. P.* On one of the leaves mass of eggs of one of the water-snails just No doubt the babies find the leaves very their taste.

PEACHES: *Z. A.* There is little doubt but that to the Peach leaves is due to burning or Ventilate more freely, and commence ear morning. In hot summer weather you can give Peach-trees too much fresh air. *J. S.* inclined to attribute the black spots upon to the puncture of some insect, but in themselves there is no evidence as to what it may be.

SEEDLING CARNATION: *A. B.* Judging from specimens you have sent us, we are not sure you have a valuable variety. You must use your own discretion, or obtain the advice of a specialist.

TOMATO: *J. Gader*. We are always pleased to receive information to our correspondents and subscribers in the multitude of things that reach us, but have to be dealt with hurriedly, things laid or lost at times, and even in some cases they do not reach us for lack of proper address or other reasons. You should send again.

VINES: *C. L.* The leaves have been ventilated more freely.

COMMUNICATIONS RECEIVED.—*T. B.*—Sutton & Sons—*W. B. H.*—*J. C.*—Shadwell—Thos. Denny.

SPECIMENS RECEIVED.—*J. C.*—Shadwell (next week)—*T. G. & Co.*



THE Gardeners' Chronicle.

SATURDAY, AUGUST 21, 1897.

THE HISTORY OF THE JERUSALEM ARTICHOKE.

THE early history of *Helianthus tuberosus* may, like that of mankind, be regarded under three divisions—a traditional, an early botanical, and a mediæval and modern. Of these the traditional resolves itself into the fact of its having been cultivated as an article of food by the Indians of North America before the settlement in that country of Europeans. The earliest evidence of this cited by Mr. Trumbull is that derived from Champlain, who, in 1605-6, observed that the Almonchiquois Indians (of New England) had "force des racines qu'ils cultivent, lesquelles ont le goût d'Artichaut." To this Mr. Trumbull adds that it is to these roots that Lescardot alludes (*Hist. de la Nouv. France*, 1612), when, speaking of the same Indians and their country, he says that the latter contains a kind of roots, "grosses comme navet, très excellent à manger, ayant un goût retirant aux cardes, mais plus agréable, lesquelles plantées multiplient en telle façon que c'est merveille." Following these is Sagard Theodat, who, in his *Histoire des Canada* (1636), mentions the roots which we, the French, call "Canadiennes, or Pommes de Canada."

Proceeding now to the mediæval history, or that of the cultivation of this plant in Europe, it seems to have been introduced into England very shortly after, if not before it had attracted the attention of travellers as being propagated by the Indians in America as a food product, for in the year 1617, Mr. John Goodyer, of Maple Durham, Hampshire, received two small roots of it from Mr. Franquevill, of London, which, being planted, enabled him before 1621 "to store Hampshire." In October of the same year Mr. Goodyer wrote an account of it for T. Johnson, who printed it in his edition of Gerard's "*Herball*," which appeared in 1636, where it is called "*Jerusalem Artichoke*." Previous to which, in 1629, it had been figured and described under that name by Parkinson in his "*Paradise*" and "*Theatrum*."

From the last given date to the present time the Jerusalem Artichoke has been extensively cultivated in Europe, but rather as a garden vegetable than a field crop, and has extended into India, where it is making its way amongst the natives under Hindoo, Bengali, and other native names. In Káthiawar, according to Watt (*Dictionary of Economic Products of India*), it is boiled in milk, and considered by the natives to be a strengthening vegetable. Aitchison states that it is grown in gardens of Herat and Mesched under the Persian name of Seb-i-zamini-angrez ("Notes and Products of West Affghan and North-East Persia," in *Trans. Bot. Soc. Edin.*, vol. xviii.).

It is very curious that the native country of a plant so well known in gardens, and in a wild state throughout the length of the Central United States, and in Canada, should have for

upwards of 250 years been considered doubtful. This was owing mainly to the vague indications of its origin given by the early authors, Brazil (following Bauhin) by Linnæus in the *Species Plantarum*, Canada by Parkinson, and by Linnæus in his *Hortus Cliffortianus*, and Peru according to Hernandez. In De Candolle's *Geographie Botanique* (vol. ii., p. 983) it is referred to the list of "Espèces inconnues à l'état sauvage," and subsequently (p. 988) as "probably North America." Even in the body of the third edition of his admirable *Origine des Plantes Cultivées* (p. 34), published in 1886, he regards the question as unsettled; and in the additions and corrections cites Gray's erroneous opinion, that it is the *Helianthus doronicoides*, Torr. and Gr. And yet, though there has been no lack of indigenous specimens in European herbaria, identical with the cultivated, no one seems to have thought of going to the Herbarium to solve the difficulty. In 1855 Asa Gray's attention was drawn to the subject from having received some long, narrow tubers, which he considered to be *Helianthus doronicoides*, Lamk., with the statement that it had been found to be good food for hogs. These were planted in the Cambridge (U.S.) Botanical Gardens, and were found to produce after two or three years, thicker and shorter tubers, which, when cooked, resembled Jerusalem Artichokes in flavour, though coarser. This led Dr. Gray to conclude that *H. doronicoides* was most probably the original of *H. tuberosus*, an opinion which was strengthened by subsequent observations published in the second edition of his *Manual of the Botany of the N. United States* (1865). Matters, however, did not end here, for it was discovered that the *H. doronicoides*, Lamk., as described by American botanists, included two species, that so called, and the true *H. tuberosus*, Linn., and it was not till the publication in 1884 of the Order Compositæ in Gray's *Synoptical Flora of N. America* that *H. tuberosus*, Linn., was definitely restored to its rank as a substantive species, and the origin of the Jerusalem Artichoke. I may add that *H. doronicoides* differs from *tuberosus* in the leaves being all, or nearly all, opposite, sessile, elliptic, never cordate, obscurely crenate, the rays much broader, and the ovary and achene glabrous. It is figured in this work, t. 2778, under the erroneous name of *H. pubescens*, Vahl.

It remains to add that *H. tuberosus* is indigenous in the lake region of Canada as far west as the Saskatchewan, and from thence southward to Arkansas and the middle parts of Georgia. Another near ally is *H. giganteus*, Linn., of which a figure has been prepared for this work, which will shortly appear.

Description.—*Helianthus tuberosus* is distinguished from all its congeners by the sum of the following characters: roots tuberous; stem tall, pubescent, branched above; leaves petioled, ovate, acuminate, serrate, scabrous above, puberulous beneath, the upper alternate; heads large; involute, bracts, lanceolate, acuminate; receptacle convex with dorsally hirsute scales; disc and ray-flowers both yellow, the latter twelve to twenty in number; achenes with pubescent tips and margins. *Sir J. D. Hooker*, in *Botanical Magazine*, July, 1897.

THE DISEASES OF PLANTS.

(Continued from p. 98.)

II.—REMEDIAL TREATMENT FOR DISEASES.

Copper Preparations for Spraying.—Sulphate of copper was one of the first copper fungicides used. Its value for mildews and mildew-like

diseases is not great, because even weak solutions are liable to burn and discolour the foliage. We shall consider it later, as a treatment for seed contaminated with fungi.

Copper carbonate as a fungicide is not a great success. The pure chemical is somewhat expensive, but as it is useful in certain preparations, to be described later, we give a method for making it cheaply:—Take (a) 3 lb. sulphate of copper (bluestone), dissolved in 2 gallons of hot-water; (b) 3½ lb. washing soda dissolved in 1 gallon hot-water; mix (a) and (b); add water up to 10 gallons, stir up, and allow to settle. The greenish sediment is copper-carbonate, and to get it pure, run off the clear fluid, add more water, then pass the whole solution through stout muslin; the powder left in the muslin is almost pure carbonate of copper. If mixed with water (1 lb. to 40 gallons), and stirred up, it can be used as a spraying solution; it is however more effective in some of the forms described below.

Ammoniacal solution of copper-carbonate is a clear blue fluid prepared by dissolving copper carbonate in liquor ammonia. As ammonia vapour is deadly to foliage, this mixture must be made up with care and away from young plants. The strong quality of ammonia (known in the trade as '880) is diluted in an earthenware (not metal) vessel with seven to eight times its volume of water, then mixed with the copper-carbonate powder; to avoid any excess of ammonia, it is necessary to stir thoroughly, and to add rather more copper-carbonate than will be dissolved. One formula which is nearly correct is: copper-carbonate 5 oz., ammonia (pure, strong) 3 pints. If the ammonia solution be weaker, a larger quantity must be used. Definite figures like these are however only a guide, there should never be more than a slight odour of free ammonia, and no large excess of undissolved copper-carbonate. The above solution before use may be diluted with from fifteen to twenty times its bulk of water, giving in all from 45 to 60 gallons of fungicide. This solution is clear and almost free from sediment, so that it may be used with any spraying apparatus; it is safe, and not likely to stain the foliage, or even maturing fruit, or flowers. It is thus a useful fungicide for a final spraying just before the crop is gathered. In its results it is weaker than Bordeaux Mixture, hence in some cases it is less reliable for effecting a cure.

Eau Celeste is practically the same solution as the above, but prepared in a different way. The original formula is: dissolve 2 lb. of copper sulphate in about 8 gallons of water; when completely dissolved add 3 pints of liquor ammonia ('880 quality), and dilute with water to 45 gallons. This is a strong fungicide liable to act on foliage.

Modified Eau Celeste is a fungicide ranking in excellence alongside of Bordeaux Mixture. To prepare it, dissolve 2 lb. copper-sulphate in hot water, and mix slowly with 2½ lb. washing-soda, also dissolved in hot water; this mixture is added to 1 quart of liquor ammonia ('880), and stirred. Before use, dilute with 50 to 100 gallons of water. It is a very cheap spraying fungicide, safe to use, and effective against mildew-fungi.

Bordeaux Mixture, or *Bouillie Bordelaise*, must be regarded as the best of all fungicides yet tested. It is a mixture formed by bringing together copper-sulphate and quick-lime in a large bulk of water. The resulting fluid, when properly prepared, is a deep sky-blue liquid in which is suspended a very fine greenish sediment. The quantity of each is

redient to be used, varies with the crop to be treated, and according to the experience of the user. At first a large quantity of copper-sulphate was used, as much as 18 lb. in 30 gallons of water; but experience has proved that a much weaker solution is equally good, while at the same time safer and cheaper. What in America is called "standard Bordeaux Mixture" contains: Sulphate of copper, 6 lb.; quick-lime, 4 lb.; water, 22 gallons. A more dilute, or "normal mixture," has the same weight of copper and lime in 45 gallons of water; while for Peaches, an even more dilute mixture may be required, with from 50 to 60 gallons of water. The preparation of Bordeaux Mixture is not difficult, but certain points need attention. The copper-sulphate used is the cheap or "commercial" quality, but as pure as possible, otherwise the Mixture may not have all the good effects desired. The lime should be obtained as "shells," and freshly slaked before using. In slaking, the water is added in moderate quantity, and at various times, so as to allow the lime-shells to absorb it equally, and break down into a fine powder; this is not the case when the shells are covered with water, or if they are left to take moisture from the atmosphere, the resulting powder is then liable to be gritty, and air-slaked lime sometimes has a different (in some cases an injurious) effect when used as a fungicide. With these precautions as to ingredients, proceed to make the Bordeaux Mixture as follows:—Dissolve 6 lb. copper-sulphate in warm water, and put into a barrel capable of containing about 44 gallons; in another vessel slake 4 lb. of fresh "lime-shells," and make up to a creamy whitewash with water; strain the lime through coarse canvas into the barrel with copper-solution, fill up with water, stir thoroughly, and the mixture is ready to use. This is the "normal" solution; the stronger or more dilute solutions are made by using less or more water, as already stated. The Mixture is most reliable when made up in quantity as just described, and used within twenty-four hours; but where not used on a large scale, it might be made up in concentrated form, and diluted as required. For this purpose it is best to use stock solutions, each containing known quantities. The copper-sulphate could be made, say, 4 lb. dissolved in each gallon of water. The milk-of-lime is best made fresh; but a stock solution of, say, 3 lb. of lime slaked and added to each gallon of water will keep well enough for a few weeks. Suppose the above stock solutions be at hand, and one wants 30 gallons of "normal" Bordeaux Mixture, it would be prepared as follows:—Dilute 1 gallon of stock solution of copper with 28 gallons of water, then add a gallon of the lime solution.

As it is important in all kinds of Bordeaux Mixture that no excess of copper remain, in other words, that there is plenty of lime present, a test known as the "ferrocyanide test," is frequently used. If a little of the Bordeaux Mixture be taken in a white porcelain dish or plate, and a solution of potassium ferrocyanide (1 oz. in 1 pint water) added, a red precipitate will be formed as long as there is excess of copper. Excess of lime will do no particular harm; indeed, many prefer it, because the Bordeaux Mixture is then slower in its action, but it tends to make the solution thick and liable to choke the spraying machines.

Bordeaux Mixture is sometimes made up with soap-solution and paraffin, or Paris Green, or London Purple, to make it a combined insecticide and fungicide, but this cannot be heartily recommended.

The action of Bordeaux Mixture is due to the suspended sediment, which consists of several compounds of copper and lime. The action of copper as a fungicide depends on the fact that its solutions attack and kill the protoplasm of living bodies. If one accepts this view, it explains why copper mixtures discolour foliage, more particularly young foliage, and cause it to wither. When made up in dilute solutions, the copper is unable to penetrate or injure the host-plant tissues, but is strong enough to attack the exposed parts of fungi on the surface of foliage, and to kill germinating spores. Neither Bordeaux Mixture nor any allied mixture can reach a disease living inside its host; it merely lies on the surface, and attacks fungi or parts of fungi which appear there. Hence the importance of an adhesive mixture with a somewhat slow action; these qualities seem to be best attained by the addition of lime with the copper, as in Bordeaux Mixture. Other methods have been suggested for making adhesive fungicides, for instance, the addition of treacle, but lime seems to make as adhesive a mixture as any, besides assisting to kill the fungi.

Spraying mixtures are applied to the plants by simply whisking them on with a bunch of twigs, or by more or less complex machines. We do not propose, however, to enter into any discussion of these; descriptions and illustrations of them may be found in the makers' catalogues (e.g., the Strawn Company, and other British and American makers). The more important points in a spraying-machine are:—(1) portability; (2) power to apply as fine a spray as possible over the whole crop, above and below the foliage; (3) thorough mixing gear, which will not easily corrode, choke, or otherwise get out of order.

With true British caution the use of Bordeaux and other spraying mixtures, although described and advocated by the *Gardeners' Chronicle* for at least eight years, has made slow progress at home in comparison with that made in France, Germany, and America. True, we have not had thousands of acres of vineyard ruined by mildew, nor the great orchards of America with their risk to disease—yet our crops are valuable, and it is well worth the consideration of every grower if it would not pay better to have a first-class crop, free from the effects of mildew and other pests, rather than the second-rate more or less defective produce one so often sees. This argument applies equally to fungus and insect-pests. The cost of spraying or other remedies is not great; labour is the largest item. On account of the limited use of such mixtures in this country, it is not easy to give reliable details in regard to treatment of crops. With Potato-disease, the results have been undoubtedly a success (see *Journal of the Board of Agriculture*, ii., 1895-96, pp. 45 and 465). In one case (Wiltshire, 1894), two sprayings with 20 lb. copper-sulphate, 20 lb. lime, 100 gallons water, were given at end of June and three weeks later, with general benefit, and a net gain of £4 16s. per acre in favour of the sprayed crop. Fruit-tree foliage liable to mildews or leaf-spot diseases may be safely sprayed with weak Bordeaux Mixture or ammoniacal solution of copper-carbonate two or three times in a season, beginning early; the results have been quite successful in North America, but details are required for this country. The 60-gallon Bordeaux Mixture is used for tender foliage, as in Peaches, Chrysanthemums, Cucumbers, and Raspberries; Currants and Strawberries are better with "normal" (45 gal.) Bordeaux. Tomato-mildew might be kept in check by weak Bordeaux Mixture, but reliable observations are yet to hand. In Vines liable to mildew are treated with Bordeaux (50 to 60 gallon mixture) once or before fruit-thinning, after this it is some risky, as it is apt to discolour the fruit. present, and until we get the experience of growers themselves, caution must be recommended in the use of Bordeaux and mixtures. Dilute solutions should be tried, then stronger, but a sharp look-out must be kept for any discoloration of foliage indicating a too strong solution. Experiment this kind carried out with care and observation on a fairly large scale, followed by publication and comparison of results in the garden press, are the only means by which we reach a true estimate of the value of fungicides.

Potassium sulphide or liver of sulphur fungicide well known in Britain, particularly for Rose, Gooseberry, and allied mildews. Applied in solution, from $\frac{1}{2}$ oz. to 1 oz. 1 gal. water, freshly prepared each time before use. *William G. Smith, Edinburgh.*

(To be continued.)

A GROUP OF ANTHURIUMS.

UPON the following page is reproduced a photograph, taken in May last, of a group of various Anthurium Scherzerianum growing in the garden E. M. Mundy, Esq., Shipley Hall, Derbyshire (Mr. Wm. Elphinstone). These very interesting beautiful stove-plants are cultivated with much success by Mr. Elphinstone, who, some time ago, obliged us by sending a collection of spathes for inspection. These cut spathes were, in fact, as dead, as compared with the figure of the plant first introduced, and they were excellent illustrations of superior cultivation. The varieties are not hybrids but descendants of the species, and those from Elphinstone were remarkable, not only for the spathes, but for variety and richness of colour varying from pale red and spotted markings, to scarlet to deep crimson. The largest spathe measured about 6 inches in length, and 4 inches in breadth.

STRAWBERRIES.

STRAWBERRIES provide all engaged in horticulture with a few weeks of closely occupied time, and as the work of the present season is over, look around to see what alterations or improvements can be effected for another year. Too seldom, however, do those who are seeking to make the cultivation of fruit profitable communicate their experience to the public for the general good; some of the old feeling still remains amongst market growers, the fortunate and mistaken spirit that knowledge is in business becomes valueless to the public, and is imparted to others. The facts point to the conclusion where discretion is exercised to do what concerns only the individual from that which affects the community at large. Wherever collections of fruit growers have been established there has been a more rapid improvement in methods which has retained and increased the amount of trade done; the competition and readiness to seize upon every advantage suggested or adopted by others invariably leads to an all-round improvement. There are many gardeners in private establishments who are particularly engaged in growing for market, and a true gardener is always eager to learn and impart his knowledge where he can do so with profit direct or indirect to the former case, and for the advancement of his calling in the latter. This train of thought has induced me to devote an early morning hour to a few remarks on the profitable aspect of Strawberry culture, especially with regard to the prospects for another season.

First in importance is the selection of varieties,

rejection of those proved useless or inferior to others of later introduction. Apart from all cultural attention and skilful method, a great deal of the grower's success will depend upon the varieties he deals with, very much more indeed than those outside the Strawberry trade have any idea. There are certain qualities absolutely indispensable in Strawberries, and foremost of these are firmness, colour, and productiveness. Soft fruits are so extremely wasteful and profitless, that however fine their appearance may be, they should be vigorously discarded if disappointment and loss are to be avoided, that is why the quality of firmness has been placed first. My worst experience in this respect has been with Sensation, which in an average season is worthless, handsome though it be, but in very hot dry seasons it is more satisfactory; and it was an experience of that kind which led me to grow the variety more largely, with the result that in

become "smudged" like many sorts do after being gathered a few hours, render it a variety well worth note, and if it could be improved into a more reliable and productive habit it would be valuable.

If the colour is very light, as in James Veitch for instance, it is a disadvantage, this variety also possessing the bad quality of softness, though not in such a marked degree as those first-named; but the great size of the fruits recommends it to some, and certainly the public will buy large Strawberries when they will not look at small ones. There are several very dark Strawberries that are worthless, but a notable exception is afforded by the superb Waterloo, which, as a handsome late variety is unequalled, the peculiar fleshy character of the fruits and their distinct flavour rendering them favourites with nearly all who know them. Speaking generally, however, there is a prejudice against dark-coloured Strawberries, and the

profit, and it is not surprising that it has been so largely planted in the past year or two. The prominence of the seeds is a point against it, but this is not noticeable in large fruits; in the smaller fruits it is decidedly objectionable. In dry weather the fruits have also a tendency to become spongy, like Latest-of-All.

Flavour does not enter very largely into the consideration of the market grower, except when he may be supplying private customers or particular markets where high-class fruits are in demand. British Queen and Dr. Hogg still stand at the head of the best-flavoured Strawberries, but they do not suit the taste of all persons, and though I grow them both I do not find them any more profitable than other sorts, though both do very well with me. They are not of taking appearance, the light colour and the frequent defect of colour at the tips of the fruits giving them an un-



FIG. 33.—A GROUP OF ANTHURIUMS AT SHIPLEY HALL GARDENS. (SEE P. 118.)

three seasons out of four it is useless, and I have now finally rejected it. The dark colour of this Strawberry, though rich looking, is not the tint most liked by the public either. With regard to another comparatively soft fruit, Noble, I must say that its quality of earliness is a strong point in its favour, and though I would not advise anyone to plant it largely who had not tried it, as it varies greatly in different soils and situations, yet I am not prepared to reject it even in the face of its superior rival Royal Sovereign, for it is some days earlier with me, and brings considerable "grist to the mill" before the other is fit for gathering in quantity.

As regards colour, in my opinion, two varieties are pre-eminent, namely, Sir Joseph Paxton and Captain, and both also possess the qualities of firmness in a marked degree, though they differ in other characters. Captain is rather uncertain, it is not a large cropper, and is not much use except from young plants, but its bright scarlet colour, glossy surface, even-shaped conical fruits, which keep admirably and do not

tendency is to regard them as over-ripe, especially some of the smaller-fruited varieties, like Alice Maud.

An early variety that is not much grown deserves notice for its colour and productiveness, namely Scarlet Queen, the fruits are only of medium size, with a few large ones, but the flavour is fair, and the very bright uniform shade of scarlet is pleasing.

Shape and size are points to be considered in market Strawberries, and in these and several other qualities, Royal Sovereign takes first place. It is a magnificent variety, the fruits of good substance and flavour, excellent as regards the shape of the berries, and of large size, a grand variety for putting in punnets. The good opinions formed respecting this Strawberry are fully confirmed by experience. I have found, however, that there is a considerable difference between the first fruits and those from two-year-old plants, compared with later fruits and the product of older plants, the former being by far the better, both in size and colour. Still, it is a Strawberry to grow for

ripened effect. Many persons also prefer a brisker flavour, for after British Queen has been gathered a few hours in hot weather it is apt to become "mawkish." Elton Pine is one of the finest late varieties, excepting Waterloo, both in appearance and flavour, it is unfortunately not one of the most productive. If an acid Strawberry is wanted, Crescent Seedling will supply the requirement, and though the fruit is small it is produced in large quantities, is firm, and early. I have not found anything sweeter than Vicomtesse H. de Thury out of doors. Where I restricted to three varieties only, I should give the preference to Royal Sovereign, Sir Joseph Paxton and Waterloo, as the best Strawberries for punnets at leading prices. Latest-of-All gave me some hope one year that it would be a useful variety for late work as punnet fruit, but it has been very disappointing ever since, this year particularly so. The variety is, however, unquestionably one of the latest in cultivation, and it is worth attention in private gardens on this account. In one year I supplied sufficient for a

large party from this variety alone the third week in July, and it gave great satisfaction.

Eleanor, though an old variety, is not to be despised, both this year and last it has given very good returns, the fruit of even size, the colour bright, the fruit firm, and the deeply-indented surface gives a very distinct appearance.

It was intended when these notes were commenced to give a few observations on gathering, sorting, and marketing, but they have run rather beyond the limit; and another week I will, with the Editor's permission, give some details about the other points that may be useful to readers. *Fruit Grower.*

BOOK NOTICE.

LAWNS AND GARDENS. By N. Jönsson-Rose, with numerous plans and illustrations by the author. (London: G. P. Putnam's Sons.)

This is a treatise on landscape-gardening, beginning with a chapter on the study of natural scenery, passing on through successive sections to the implements made use of in surveying, the practical work of laying out and planting either in masses or as isolated specimens, the formation of lawns, rock-work, hedges, and the formation of orchards and kitchen gardens. The second part of the volume is devoted to a descriptive enumeration of the principal shrubs, trees, and herbaceous plants. The book is handsomely got up, is well illustrated with sketches from Nature, and has a good index. In the first chapter, on the study of natural scenery, the author runs a risk of confusing the study of natural scenery with the practice of landscape-gardening. Undoubtedly, the gardener who has used his eyes, and trained himself to enquire upon what conditions the phenomena of natural scenery depend, is in a far better position to do good work than one who has not had such training. The art of the landscape-gardener consists in the application of the knowledge that he has gained by the study of natural effects and of natural conditions to the circumstances before him. On the one hand, a servile imitation of Nature in a back garden is little other than preposterous. Adaptation to circumstances and locality, on the other hand, shows the taste of the artist, and leads to the most satisfactory results. In a garden we require the plants to grow in the most perfect way possible. In Nature plants have to grow how they can and where they can, and it is only occasionally that we can see them at their best. In Nature, too, we often meet with monotony when one species obtains and maintains the upper hand; but in landscape gardening of the best kind, we look for contrasted effects in one place, and reposeful harmony in another. A meadow full of Snowdrops, of waving Daffodils or Chionodoxa, is very beautiful in its place, but that place is not near the dressed garden nor in the immediate vicinity either of buildings or of "specimen" trees or shrubs. In such situations they call off the attention from objects of greater intrinsic importance, and destroy the restfulness and sense of space of the lawn. In the wild garden proper, or the Wilderness-walk, the conditions are very different. There one revels in the flowers, as in a wood full of Primroses in spring.

The work before us is written for American readers particularly, and the illustrations are largely of American trees and shrubs. Garden-lovers in any country will, however, find many useful hints in this handsome volume, and many subjects for discussion on matters of taste and opinion. The illustrations have the prime merit of accuracy so far as circumstances permit.

THE ROSARY.

THE WARS OF THE ROSES.

THESE are now over for the season, and like those engaged in the continental wars in the Middle Ages, the combatants have gone into winter quarters. The

custom then was, however fiercely they had been engaged, when the bad weather came on, fighting was suspended, not to be resumed until the following spring; and so now our combatants have laid aside their weapons, boxes have been emptied, tubes cleaned, and name-cards replaced in their receptacles, and what is left for us now is simply to review the past, and count on the possibilities of the future. There have been skirmishes over many parts of the field of considerable interest to those when the shows were held, but not really affecting the general character of the combat. The points on which the thoughts of most rosarians are centred are the three exhibitions of the National Rose Society.

The Show at Portsmouth.—These have been held under varying circumstances, and probably never since the society has held its three shows have their results been more chequered, for while that at Portsmouth on June 18 was the smallest the society has ever held, the Metropolitan one, held at the Crystal Palace, was the largest; and the Northern Show at Norwich exceeded in its strength most of those which have been held in northern towns. The reason for the smallness of the Portsmouth show are not far to seek: it was the earliest date on which the National has ever held a show, too early in fact in any year except for the Isle of Wight and other warm localities, but especially so in a season like the present one, which was not an early but a late one. Roses broke well after pruning, there was abundance of moisture in the soil (perhaps a little too much so for cold and clayey districts), and everything looked promising for a good Rose-season; but the long spell of cold and ungenial weather in May and the early part of June altered the face of things, and we evidently had to look out for a late and not for an early season—and therefore it was unfortunate that the fixture for the Portsmouth show was necessarily altered, because the day originally fixed was the one immediately following the Jubilee celebration, and the local authorities felt that they must put it backward and not forward. Moreover, one finds that alteration of dates does not answer as a general rule: the 23rd, originally fixed for the show, was a fine day; the 18th, on which it was held, was wet and stormy, the wind blew nearly a gale, but in such a place as Portsmouth it was not likely that any remissness would be found "in making all taut," and so no catastrophe like that which took place at York occurred here. As might have been expected, the most southern growers were very prominent; early as the date for the show was, it was not so early as the fixtures generally made by the Ryde and Isle of Wight shows.

Probably the most interesting part of this exhibition was the section for garden Roses; for many of these the earlier date answered well, and the collections exhibited by Messrs. Cooling of Bath, and Mr. Tate of Leatherhead, showed what could be done in both the professional and amateur classes. Captain Ramsey, who so energetically worked for the Society, had generously given a ten-guinea cup for the best twelve varieties: this was awarded to Mr. A. Tate of Leatherhead, for a superb box of blooms; so good were they that not only did they obtain this prize, but the two medal blooms for amateur classes were found in it, in Mrs. John Laing and Madame de Watteville. As these flowers were all grown under glass, they had a great pull upon those who cut from the open. The other two medal blooms in the nurserymen's class were a hybrid Tea, Lady Mary Fitzwilliam, exhibited by Messrs. Prior & Son (this variety used always to be accounted a hybrid perpetual), and Comtesse de Nadaillac, exhibited by Mr. George Prince, of Oxford—a flower of the usual high colour which he always manages to get into this fine Rose. Mr. B. R. Cant, Messrs. Prior & Sons, and Mr. F. Cant, occupied very prominent places. There was considerable disappointment as to the competition for the George Prince Memorial prize, as it was hoped that most of our leading amateur Tea-growers would have been competitors, but they were most of them conspicuous by their absence. The prize fell to the lot of Mr. Alex. Hill-

Grey, probably our most enthusiastic Tea-grower, and therefore one was glad to see that he carried it off, more especially as he and Mr. Prince were great friends.

The Crystal Palace Show.—If, however, the southern show fell so far short of our expectations and wishes, the great Metropolitan show at the Crystal Palace on July 2 exceeded, alike in extent, variety, and quality, any of its predecessors. It was the first time that it has been held on any day but Saturday, and of course to most of our exhibitors it was a pleasant thing to be able to get home quietly on Friday night and escape the bustle and inconvenience of the late arrival home on Saturday evening. It had, moreover, another good effect: on no day of the week is there such a throng of visitors as on Saturday, and consequently many, both exhibitors and visitors, were surprised at the ease with which they were able to get about and inspect the flowers. I cannot, however, say conscientiously that the general effect of the show was as good as in former years, and I think it never looked so well as when the long nave was given up to the Roses. The concert-room, too, where a large portion of the flowers were staged, has a very bad light at all times, and on a dull day like the 2nd of course the light is worse, and the amateurs who were relegated to this part of the building were loud in their disapprobation. Equally so, no doubt, would the professionals have been had this been allotted to them; but, after all, what place is equal to the Crystal Palace for an extensive exhibition of this kind? Tiring, no doubt, it is to those who have much to do on such days; boards are so much more tiring than the turf. So far as the number of the flowers was concerned, and the various quarters from whence they came, the exhibition was a remarkable one; in the larger classes we find the names of the old exhibitors recurring over and over again. One very pleasant feature of the show was the number of new exhibitors in the smaller classes, showing how well the plan of exhibiting according to the number of plants grown, introduced by Mr. Charles J. Grahame, has succeeded. In the amateurs' division Mr. E. B. Lindsell showed better than he has done for the last three years, and carried off the new Challenge Trophy, and most of the principal prizes for amateurs; he has a beautiful soil for Roses, and long experience, and also understands well how Roses may be best put up.

Messrs. Harkness & Sons took the leading position amongst nurserymen, and again carried off the Challenge Trophy, although they were run pretty close by Mr. B. R. Cant. Another feature in the show was the new Roses. For many years this was a most unsatisfactory exhibit. We were mainly dependent upon foreign Roses, and, owing to the severe duty which they had to go through in giving buds for propagation, they were mostly poor in quality; but now, when English raisers are sending out so many good new Roses, the case is entirely altered.

The stand for the best twelve was awarded to Messrs. Dickson & Sons, of Newtownards and Ledbury, and the flowers were exclusively those of their own raising. Amongst them was a beautiful pink Rose, with shell-like petals, called Ulster, which gained the Gold Medal of the National Rose Society for a new seedling; and the others in the collection were Daisy, Mrs. Grahame, First Cross, Bessie Brown, Mrs. Mawley, Mrs. W. J. Grant, Eileen Killarney, Lady Clanmorris, Tom Wood, and Countess of Caledon. Some of these, such as Mrs. W. J. Grant, are well known, the others are not yet widely distributed, but many of them are highly spoken of, and some doubtless will fall out of the ranks.

In the amateurs' prize for six new Roses, the same fact is observed, only two of them being of foreign origin. Besides these there were some that were either as sports or seedlings, which will most likely be useful entries as exhibition or garden Roses. Mrs. Frank Cant, shown by Messrs. F. Cant & Co., is another of those delicately-coloured, well-formed Roses which are sure to find favour. Mrs. Rumey is a pretty and useful garden Rose, and Messrs. Frank Cant & Co.'s sport from Suzanne-Marie Rodocanachi has all the good form and substance of that

favourite flower, but of a salmon-pink shade of colour. Of course, the Medal Roses are subjects of great interest to all rosarians, and the few to whom the lot of selecting has fallen know the great difficulty of the task. Sometimes one has wondered why the particular blooms have been selected, but in this case no such doubt could have arisen. The grand bloom of Muriel Grahame, by which Mr. Lindsell gained the Medal, was a magnificent flower, so also was that by which Mr. Orpen obtained the Medal for the best H.P. or H.T., Kaiserin Augusta Victoria.

The Medal blooms in the nurseryman's class were, I think, hardly equal to these, although one was glad that such well-established favourites as Horace Vernet, exhibited by Messrs. Harkness & Sons, and Madame Cusin, shown by Mr. B. R. Cant, obtaining the Medals. There were two features in the exhibition which, I think, did not come up to the wishes or expectations of the friends of the Roses generally—I mean the decorative classes. For the first time table-decorations, composed of Roses only, was introduced ;

Messrs. Paul & Son of Cheshunt, and Cooling & Son of Bath, were the only exhibitors in the nurserymen's class, and both their stands were worthy of all praise. Mr. H. V. Machin carried off Lord Penzance's Cup in the amateur division. In these connections many of the old favourites made their appearance, and also some newer varieties, such as Dawn, a pleasing pink shade of colour ; and Blanche Double de Courbet, one of the rugosa section, both exhibited by Messrs. Paul & Son ; while Messrs. Cooling had a very pretty bright Hybrid Tea, called Purity, which is likely to be very useful for both decorative and gardening purposes. Mr. Machin's stand was put up with the usual taste which he displays, and it was no small task to bring such a collection from so far north as Worksop, for they are a most troublesome class to carry. There is no doubt that this is a popular class, but I think at the same time the successful competitors in it must be always those who have large gardens. *Wild Rose.*

(To be continued.)



FIG. 34.—DENDROBIUM VICTORIA REGINA: FLOWERS SLATY-BLUE, WITH WHITE CENTRE.

and I do not think that the innovation is likely to be repeated. People are always praising the Rose as a subject for decorative purposes, but I cannot agree with them. For some few years classes have been introduced to encourage this, but I think that most persons will agree that they have been anything but decorative. The fact is, in my judgment, lightness forms one of the chief characteristics for a good stand of cut flowers. The exhibition-Rose is not a light flower, and the better and more perfect it is, the heavier it is ; and so the only way in which flowers in this class do show well, is when they can be displayed singly. I may say, so far as one's own use of flowers is concerned, we never use them for vases. Tea-Roses, cut with long stems, and used sparingly, may be the exception which proves the rule. The French are always considered to be our superiors in all these matters ; but I have a distinct recollection of a grand bouquet, sent by a *bouquetiste* in the Palais Royale to the Crystal Palace to contend for the prize, and an uglier exhibit I never wish to see. Garden-Roses, as usual, formed a pleasant and attractive feature, although the date was somewhat late for many of them, and they were certainly not so abundant as at Portsmouth ; indeed, they were the only classes in which all the prizes were not awarded, owing to the lack of competition.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM VICTORIA REGINA, *Loher*.

OUR illustration (fig. 34), gives a representation of this pretty species, which was described in the *Gardeners' Chronicle*, June 19, 1897. The plants were sent to Messrs. Protheroe and Morris, who offered them on Friday, June 18 ; and therefore the proof of the correctness of the description, which purchasers look so anxiously for in the matter of a "blue Orchid," was not long delayed, for specimens of it have flowered in several collections, and have generally been considered satisfactory. The specimens vary somewhat, but all bear white flowers coloured on the outer halves of the segments with shades of blue. It is stated to be a native of the Philippines, growing at an altitude of 6000 feet. The plant from which our illustration was taken was exhibited by Thos. Statter, Esq., Stand Hall, Whitefield, Manchester (gr., Mr. R. Johnson), at the meeting of the Royal Horticultural Society on the 10th inst., when it was given an Award of Merit.

A MONOCIOUS CYNOCHES CHLOROCHILON.

Amongst some imported plants of this species, one plant last year produced an inflorescence bearing two

female flowers, in appearance more flat than the common ones, and possessing a thicker and shorter column, but in colour almost identical. This year a strong growth produced two racemes, one of which bore two female flowers (which seems to be the usual number), while the other carried five male blooms, which, unfortunately, did not properly develop, though quite sufficiently so to identify the long, slender columns of the male flowers. The plant upon which this growth has been made produced thirty-five flowers last year, in a 6-inch basket, all of which were male. Mr. Rolfe has worked out this remarkable character of the genus, especially in the case of some species known to be monocious. In the pages of the *Gardeners' Chronicle* of 1891, p. 69, he mentions the receipt of female flowers from France. *R. L. H.*

ORCHID PORTRAITS.

- CATLEYA OBTUSA, *Cogniaux Dict. Icon. Orchid.*, Catleya, t. 6, May.
 CATLEYA INTERMEDIA, *Cogniaux, Dict.*, pl. 8.
 CATLEYA INTERMEDIA VAR. PARTHENIA, *Cogniaux, Dict.*, Catleya, pl. 8A.
 CATLEYA PERCIVALIANA (O'Brien), *Cogniaux, Dict.*, Catleya, t. 7.
 CATLEYA TRIANÆI, VAR. DELICIOSA, *Lindenia*, t. DLXIV.
 CATLEYA TRIANÆI VAR. MARIE, *Cogniaux, Dict.*, Catleya, pl. 5C.
 COCHLODA MINIATA, *Lindenia*, t. DLXII.—A natural cross between *C. Noctalliana* and *C. vulcanica*.
 CYMBIDIUM EBURNEUM, *Cogniaux, Dict.*, Cymbidium, pl. 1.
 CYMBIDIUM EBURNEUM-LOWIANUM, *Cogniaux Dict.*, Cymbidium, pl. 1A.
 CYPRIPEDIUM ABUS, *Cogniaux, Dict.*, Cypriped., pl. 5.
 CYPRIPEDIUM CHARLES CANHAM, *Cogniaux, Dict.*, Cypripedium hyb., pl. 9.
 CYPRIPEDIUM IN-IGNE, VAR. 1, fuscum ; 2, picturatum ; 3, immaculatum, *Lindenia*, t. DLXIII.
 CYPRIPEDIUM MADAME JULES HYE, *Cogniaux, Dict.*, Cypriped. hybrid, pl. 8.
 CYPRIPEDIUM TOSNUM, *Cogniaux, Dict.*, Cypripedium, pl. 6.
 DENDROBIUM INFUNDIBULUM, *Cogniaux, Dict.*, Dendrobium, pl. 6.
 DENDROBIUM MOBILE VAR. NOBILIUS, *Cogniaux, Dict.*, Dendrobium, pl. 1C.
 EPILOELIA X HARDYANA, *Cogniaux, Dict.*, Epilaelia, pl. 1.
 LÆLIA ANCEPS VAR. STELLA, *Cogniaux, Dict.*, Lælia, pl. 4A.
 LÆLIA CINNABARINA, *Cogniaux, Dict.*, Lælia, pl. 7.
 LÆLIA PRÆSTANS, *Cogniaux, Dict.*, Lælia, pl. 3A.
 LÆLIO-CATLEYA PALLAS X C. CRISPA X C. DOWIANA ♂, *Revue de l'Horticulture Belge*, June, p. 130.
 LYCASTE MACROPHYLLA VAR. LEBBOURIANA, *Cogniaux, Dict.*, pl. 3A.
 LYCASTE ROSSIANA, *Cogniaux, Dict.*, Lycaste, pl. 4.
 MILTONIA CLOWESII, *Cogniaux, Dict.*, Miltonia, pl. 4.
 ODONTOGLOSSUM CRISPUM VAR. AMI CHARLES, *Lindenia*, t. DLXVI.
 ODONTOGLOSSUM CRISPUM VAR. KEUHLJANI, *Lindenia*, t. DLXV.
 ODONTOGLOSSUM CRISPUM VAR. LINDENI, *Lindenia*, t. DLXVII.
 ODONTOGLOSSUM CRISPUM VAR. LUCIANI, *Lindenia*, t. DLXVIII.
 ODONTOGLOSSUM EXCELENS X, *Cogniaux, Dict.*, Odontoglossum hyb., pl. 1, proved by Messrs. Veitch to be a cross between *O. triumphans* and *O. Pescatorei*.
 ODONTOGLOSSUM HUMERANUM, *Cogniaux, Dict.*, Odontoglossum, pl. 7.
 ODONTOGLOSSUM TRIUMPHANS, *Cogniaux, Dict.*, Odontoglossum, pl. 8.
 PHAIUS X MARTHA, *Lindenia*, t. DLXI, a hybrid between *P. Blumei* et *P. tuberculatus*.
 TRICHOPIA BREVIS, *Garden*, May 22.
 ZYGOCOLAX X VEITCHI, *Cogniaux, Dict.*, Zygocolax, pl. 1.
 ZYGOPETALUM INTERMEDIUM, *Cogniaux, Dict.*, Zygopetalum, pl. 1.
 ZYGOPETALUM PERENNODI.—A cross out of *Z. intermedium* by *Z. Gautieri*, *Cogniaux, Dict.*, Zygopetalum hyb., pl. 1.

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 63 to 69.)

4, MIDLAND COUNTIES.

(Continued from p. 101.)

OXFORDSHIRE.—Although the prospects early in the season for a good fruit year were very encouraging. Apples and Pears, with one or two exceptions, are a very light crop. Plums are an average crop. Apricots are thin, and a great many large branches have died-off. Sweet varieties of Cherries have carried a good average crop of fine large fruit, and very clean. Small fruits are a very heavy crop, especially Gooseberries, Black Currants, and Raspberries. Strawberries, although very much injured by the frost when in bloom, have been excellent in both size and flavour. Figs outside are carrying a good crop of extra-sized fruit. Nuts are very plentiful indeed, and Walnuts a good average. *A. G. Nichols, Nuneham Park Gardens, Abingdon.*

SHROPSHIRE.—The Plums, Apricots, and other stone-fruits, are nearly a failure here. Pears are below the average. Apples very variable; some sorts, such as King of the Pippins and Warner's King, are plentiful, while others have few or none. *James Loudon, The Quinto, Chirk.*

— All the Apple-trees with us and in our neighbour's garden were covered with blossom, and at one time looked very promising for good crops of fruit; but after the blights that occurred, only Codlins, Lord Suffield, Lane's Prince Albert, Ribston Pippin, and Bramley's Seedling set well. I may say that all varieties of Plums set very clean fruits; but the crop is under average. Some kinds of Pears have set fairly well, viz., Marie Louise, Beurré Bosc, Williams' Bon Chrétien, Beurré Diel, and some Bergamots. Shropshire is noted for Damsons, but this year there are very few. *Wm. Weeks, Cheswardine House Gardens, Market Drayton.*

— The frosty nights in the second week of May did considerable damage to the early fruit-blossom; Strawberries would have been a very heavy crop but for the frost killing all the first blooms, which would have been the largest fruits, consequently, the crop is under-sized; some of John Ruskin, on a south border, escaped, and began to ripen on June 2. Apricot-fruits were nearly all killed, some fruits half-an-inch in diameter were frozen through; Moor Park suffered the worst. Of Apples and Pears some trees bear a heavy crop; others have none. *G. Pearson, Attingham Gardens, Shrewsbury.*

STAFFORDSHIRE.—Apples are a very partial crop here this season. Keswick and Mank's Codlin, Hawthornden and King of the Pippins are a fair crop, but Blenheim, Cox's Orange Pippin, and late varieties are very thin indeed. Pears are a very poor crop. Strawberries fair crop, and good in quality. Raspberries are a very light crop. Currants, especially red, are very good, both in crop and quality. *John Wallis, Keele Hall Gardens.*

— Plums are very few. Damsons none. Raspberries very good. A few of the earliest flowers of the Strawberry were killed by late frosts. Early Pears, as Williams' Bon Chrétien, Princess, and Jargonelle had nearly the whole of the bloom destroyed by frost. The mid-season and late kinds escaped. Wall-trees which had had their spring covering removed, had most of the young fruits destroyed by the very late frosts. *Geo. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.*

WARWICKSHIRE.—You invite me to tell you my story about the fruit crops. Why, sir! like the needy knife-grinder, I have none to tell. As to the hardy fruit in these gardens, the only redeeming feature was the crop of Strawberries, which was fine in quality and large in quantity; and it lasted well, considering the drought; luckily, we had heavily mulched them in good time. Whilst writing of Strawberries, a friend of mine, who had graduated in the gardens of the Royal Horticultural Society, and who is a man always well in advance of the necessary up-to-date point of horticultural gossip, asked whether I had heard of the "new London" way of growing Strawberries? "No," was my reply; "living in this out-of-the-way place, we never see any practice beyond our own; we trust to the fountain of our early tuition, and draw upon our inventive imagination when we wish to make a new departure." My friend then explained, that the new way was to plant new beds every year, and dig them down as soon as the fruit was gathered, i.e., never having a bed more than a year old. Upon this new London patent, I found I had already been practically though unwittingly infringing, and walked my friend to a plot which I had been treating in precisely a similar way. I believe there is something in it; from our plants so treated we gathered plenty of fruits of good quality. Apples and Pears, as compared with the crop of last year, may perhaps be described as miserable. There will be about enough Apples in this part of the country to provide us with puddings and pies until the arrival of our sure supply from over the Atlantic. One day lately I happened

to be travelling in a railway carriage with a Canadian Apple-planter. Looking out of the window, our attention was drawn to the usual mismanaged Warwickshire orchard. My friend described to me how they planted their trees in Canada, and followed on until they were brought to their fruiting stage, which is arrived at much sooner than in this country; finishing up by telling me how a London coachman, after saving himself some money, betook himself to Canada, bought land, planted it with Apple trees, which he grew, fruited, and sold to advantage; bought and planted more land. This he continued to do until he became quite rich, but not proud, for nothing pleased him better, my friend informed me, than on high days and holidays to don his London high-hat with the "badge," emblem of the coachman's dignity still upon it. How many of us, might I ask, with all our knowledge, would have pluck enough, like this coachman, to go and do likewise? Apple culture in England, with not many exceptions, consists rather in obtaining a few trees to plant on some small space of ground, to provide sufficient only to be able to send up a few dozen dishes to a Crystal Palace show, there to be seen once, but, as Edgar Allen Poe's raven said, "Never, never more." [If our friend would pay a visit to the district round Swanley, Farningham, Maidstone, and elsewhere in Kent, he would modify his notions with regard to Apple, Plum, and bush-fruit culture. Ed.] Of Pears, those which generally yield fairly well have this year scarcely any, viz., Marie Louise, Williams' Bon Chrétien, and Louise Bonne; whilst Huxley's Victoria, which last year stood me in such good stead, is again this year pretty fruitful. Being in the midst of great heat and drought, we are applying to our wall Pear-trees a heavy mulching of stable-litter, and a heavy drenching of water over all. Those beautifully-trained trees which have been figured in this paper I am anxious to retain in perfect health. Of Plums there is scarcely any, and the Apricot is not much better. The Walnuts are thin on the trees, the flogging winds having shaken off most of the embryo fruits. Hazel-nuts and Filberts promise well. Out-of-doors Peaches, where care has been bestowed upon them, are satisfactory; indoors these and Nectarines were never better, or the fruit finer. *W. Miller, Combe Abbey Gardens, Coventry.*

— The Apple crop in this district is very irregular and under average, only the varieties Keswick Codlin, Lord Suffield, and Lord Derby having fair crops of fruit. The fine desert varieties of Apples are almost fruitless, owing to the injury caused to bloom by easterly winds and frosts. Caterpillars have also made sad havoc with the trees. Pears, on the whole, are a good crop. Plums of all varieties are a failure; moreover, the trees are badly infested with aphids. All outdoor crops on this light soil are suffering from the continued drought. *Henry Thos. Martin, Stoneleigh Abbey Gardens, Kenilworth.*

— The Apple crop generally will be quite a small one in this neighbourhood; still, the varieties Stirling Castle, Keswick Codlin, Lord Suffield, and Golden Winter Pearmain show an average crop. Exceptional crops of Plums are found on Denyer's Victoria, Pond's Seedling, and Early Pro'fic. *A. D. Christie, Rayleigh Gardens, Alcester.*

(To be continued.)

DARWIN.

At the luncheon given at Shrewsbury in connection with the unveiling of the Darwin statue, as mentioned in our last issue, Sir Jos. Hooker made the following very interesting statement in proposing the toast of "The Memory of Charles Darwin"—a name which he could not mention without emotion on the present occasion; but he asked them to look back in their imagination to just sixty years ago and let him tell them of the genesis of the affection and reverence which he cherished for the memory of Charles Darwin. It was in 1838 or early in 1839 that he first knew of him through receiving from a friend of his (Sir Joseph's) father the loan of some sheets of the "Records of a Naturalist during

the Voyage of the *Beagle*," which work was then passing through the Press. He (Sir Joseph) was at the time hurrying through his studies at the University of Glasgow, in order that he might accompany, as a naturalist, Captain, afterwards Sir James Ross, in his projected voyage to the antarctic regions. Being engaged with hospital duties, he had little time to devote to the precious sheets, and so he slept with them under his pillow in order that he might read them in the interval between dawn and dressing. This he did with fascination; but he must add with despair of ever following, at however great a distance, in the footsteps of so admirable an observer and reasoner. A copy of the "Records of a Naturalist" was sent to him as a parting gift as he was on the eve of leaving England; but meanwhile he had once met the author, having been casually introduced to him in the streets of London by a shipmate who had sailed with him in the *Beagle*.

Very shortly after his return from the antarctic voyage in 1843, he received from Darwin a cordial invitation to visit him at his "inaccessible home" as he used to call it, at Down, adding that he had much to ask him about, in botanical matters especially; and, as he afterwards found, Darwin especially wished that he should publish some of the botanical results of the voyage. This "inaccessible home," destined to become the Mecca of so many a scientific and literary pilgrim in after years, was then 10 miles from a railway station. He (Sir Joseph) should never forget the frank and joyous reception that met him on his first visit to Down, damped though it was by finding his friend's health so impaired. They had much to talk over, having visited in many cases the same countries during their respective voyages—the Cape of Good Hope, Rio de Janeiro, St. Helena, Tasmania, New South Wales, New Zealand, &c., so that they felt like fellow-voyagers, forgetting the eight years that had elapsed between the dates of their respective cruises. It was, however, in the study at Down that their intimacy commenced and ripened. On the morning after his arrival on his very first visit, Darwin asked him to accompany him to his sanctum for the purpose of his (Sir Joseph) giving him some botanical information, the great scientist being especially engaged on the geographical distribution of animals and plants. And the following was a sample of how the day was passed on this and many subsequent visits. Mr. Darwin had always a long list of queries to put to him, sometimes collated months beforehand, the answers to which were distributed on slips of paper amongst a marvellous number of pockets, bags, and portfolios, that hung on the wall, or occupied racks by the fireside. This "pumping," as Darwin called it, went on for twenty minutes or half-an-hour, after which he stated that he was incapable of further mental exertion, and that he must rest till the time for his mid-day walk. They might ask him what struck him most forcibly about these exercises of his intellect; and, putting aside the marvellous amount of knowledge which he gained, they were Darwin's indomitable perseverance under bodily suffering, his command of all the available sources of knowledge in any given object of research, his vivid and strong grasp of the most difficult subjects, and his power of turning to account the waste observations, and even the blunders, of his predecessors and contemporaries; which power his (Sir Joseph's) friend, Sir James Paget, once told him was, he thought, one of the most striking of the many evidences of Darwin's genius. It is "dogged that does it," was a favourite expression with him, and so dogged was he that he had cited his very illness as being to his advantage, congratulating himself, for instance, on sleepless nights that allowed him to read off his continuous observations on the movements of his beloved plants. Such was his association with Darwin for forty years, during all which time he was his guide, philosopher, and friend. It only remained for him to join with them in rejoicing over the fact that the admirable likeness of his old friend, which the President had unveiled that day, had been obtained by the efforts of horticulturists; and when he considered how

much scientific horticulture owed to Darwin, this was as it should be; moreover, he felt well assured that could Darwin know that that tribute to his memory was, by those special efforts, placed in his birthplace, amongst the loved scenes of his early youth, he would regard it as the most prized of all the honours that had been or could be bestowed upon him. *Shrewsbury Chronicle*.

BEDDING IN BATTERSEA PARK.

BATTERSEA PARK, the product of the genius of the late John Gibbon, and covering the space once occupied by the Inn known as the Red House, so celebrated for its shooting matches, will always be

Aristolochia Sipho (popularly called "Dutchman's Pipe"). *Monstera deliciosa* here luxuriates on the sides of a tree.

A mixed border opposite a portion of the lake is very gay with stately Hollyhocks, interspersed with Fuchsias which are flowering well, a very dark-leaved *Coleus*, and edged with *Pelargonium Zelia*. A trellis-like arrangement of the old and well known *Clematis Jackmanni* in this quarter flowers magnificently.

Amongst some of the flower beds noted may be mentioned—mixed *Verbenas* flowering profusely, and some good varieties of the new dwarf *Cannas*—very striking with their *Gladiolus*-like flowers; other beds mainly devoted to *Cannas* are looking well. Very effective is a bed of mixed *Heliotropes*, forming a

Pelargonium, throughout which freely peeps a rich blue *Viola* with small yellowish eye.

In a spot embowered in a wealth of trees, therefore taking off the otherwise overpowering colours, is a very large circular-shaped arrangement on the grass, the side representing a shield-shaped bed gay with *Pelargoniums*, *Lobelias*, etc. Too free a use is made of the Golden Feather for edging. The witty Sydney Smith was asked once if he could bury a Dissenter; his reply was that he would be quite willing to read the service over all of them. On the same principle, one would like to bury all the Golden Feather!

The beds on the level in this particular arrangement are composed of well-flowered *Pelargoniums*, *Fuchsias*, etc. Fine examples of *Succulents* planted here have also the desirable effect of toning down the bright colours. The condition of the Park entitles Mr. Coppin, the Park Superintendent, to much credit. J.

THE GROWTH OF TROPICAL FRUITS IN MADEIRA.

(Continued from p. 311, vol. xxi.)

AMONGST the species of *Anona*, or Custard Apples, grown in Madeira, the *Cherimoyer* of Peru (*Anona cherimolia*) appears to be the favourite, both with the residents and the visitors to the island, and it is considered by the medical faculty to be a wholesome and nutritious food for invalids, when eaten in a thoroughly ripe condition. The size of the fruit varies greatly; the ordinary size is about 4½ inches long by 3½ inches broad, but the choicer fruit, which is that mostly exported, is from 6 to 7 inches in length, and of a proportionate diameter. These larger fruits attain a weight varying from 1½ to 2 lb., and as a rule they are the choicest and best flavoured, fetching a much higher price than the smaller or medium-sized fruit. When ripe the fruit is of a pale green colour. It has a very thin skin, covering the pulpy or edible portion, which envelops a number of hard, black, almond-shaped seeds. The choicer varieties contain fewer seeds and more pulp, but in the commoner sorts they are very prominent, and detract from the marketable value of the fruit. The Custard Apple is not grown in plantations or orchards; but every small garden contains one or two trees, which are usually grown from cuttings or seed, and having attained sufficient growth, are grafted in much the same way as fruit-trees are in England. The oldest and largest trees attain a height of about 20 feet. A full-grown tree in a healthy condition and properly cultivated will yield fully 200 fruits as an annual crop, and instances have been known where trees have given a profit of £5 per tree per annum, although this is an exception. Unfortunately, little or no attention is paid to the cultivation of any fruit trees in Madeira, and they are allowed to run in many instances from one season to another without either pruning or manuring, in consequence of which they are attacked by mealy-bug, from which the fruit, having no strength to resist, falls to the ground when about half grown—and these observations apply to nearly all the fruit trees grown in Madeira. On this subject the writer of the report says, "I am strongly of opinion that were a little more attention paid to the cultivation of this class of fruit it would amply repay itself, and probably show an increased return both in the quantity and quality of the fruit in the first season after being so treated." The export trade in this fruit is both limited and fluctuating, a small quantity goes to the London market, and there is also a small export trade to Lisbon; but by far the greater bulk of the fruit grown is consumed in the island, or is taken by passenger steamers calling at the port for fresh provisions. Were this fruit better known in England, the demand for it would probably be much greater than it is at present, and an impetus would be given to cultivate it in greater quantities. When gathered in a quasi-ripe condition, it matures in from seven to ten days, in the same manner as Pine-apples do; and there seems to be no difficulty on the score of packing.



FIG. 35.—*ARISTOLOCHIA ELEGANS*. (SEE P. 126.)

amongst for its sub-tropical bedding. For some time to come none of London's other public parks will be so suitable as this one for this form of gardening, all lacking more or less the shelter from high winds that is essential wherever tall, large-leaved, or tender tropical plants are plunged outside. At Battersea there is such a wealth of deciduous trees and shrubs, and such cool, green turf and charming "peeps" across the lake, that bright and glowing colours are toned down. The idea of flatness of surface, so objectionable but sometimes unavoidable, never strikes one. So beautifully diversified by hill and dale are the grounds, and the planting arrangements have been made with a view to providing picturesque effect, that the whole forms a charming living picture.

How delightfully cool and refreshing are the shady Fern-glades here! *Mosses* give a noble and tropical aspect to the surroundings, as do the *Palms*. *Pandanus Veitchii*, with its long, spiny leaf, looks well in the open. Near the margin of the water is

delightful groundwork to the well-known and noble-leaved *Brugmansia Knightii*, just passing out of flower. A striking bed is formed of *Celosia pyramidalis aurea*, associated with single-flowered *Begonias*, and *Lobelia pumila magnifica*, the whole over-arched with gracefully pendent foliage. Attractive too is a bed of *Fuchsia*, *Golden Treasure* mixed with the graceful *Chamaejasme diacantha*, and *Antennaria tomentosa* as an undergrowth.

Dactylis glomerata, elegant-leaved *Aralias* and well-flowered *Tuberous Begonias* make an effective bed. A good bed of foliage is produced by the old *Dracæna Draco* (introduced from the East Indies in 1640), with the much more modern and brilliant-coloured *Acalypha tricolor*. An imposing bed of *Ficus elastica*, with an undergrowth of darker-leaved foliage plants produces a good effect.

Abutilon Thompsoni, with its yellow and green foliage, makes a happy arrangement mixed with blue *Lobelias* and edged by *Fuchsia Meteor*. A charming effect is made with a block of silver-leaved

Guava (*Paidium guayava*). This well-known fruit, as grown in Madeira, is said to be of a very inferior quality compared with that of the West Indies, which the writer of the report attributes to neglect of culture rather than to any fault of soil or climate. In Madeira it is seldom used in a raw state, but is usually stewed, or made into jelly. The fruits are not exported to any extent, but small quantities go to Lisbon and other Portuguese possessions.

The Loquat (*Eriobotrya japonica*) is another fruit which is not exported, in consequence of its having to be eaten in a freshly-gathered state. It grows to great perfection in Madeira, producing clusters of fruits of the colour and size of an Apricot. It has a slightly sub-acid flavour, and is most refreshing in warm weather. It is used either raw or stewed.

The Mango (*Mangifera indica*) is grown in most gardens, but no attention is paid to its cultivation, the trees being seldom, if ever, pruned or manured, the consequence being that the fruit has greatly degenerated both in size and quality, the luscious fruit so familiar to those who have lived or travelled in India or the West Indies being quite unknown in Madeira. As grown in the island, the fruits vary greatly in size and quality, the bulk of the fruit seldom exceeding in size that of a large Eogliah Plum. In the larger-sized fruit the stone or seed appears to gain in size out of proportion to the pulp or edible portion. The fruits are in greatest perfection, both as regards size and flavour, about Christmas, the season lasting from September to February. The trade in this fruit is a fluctuating one, the greater proportion of the crop being consumed by the residents of the island. Small quantities go to both the English and Lisbon markets. The Mango is a very suitable fruit for exportation, as it can be gathered in a fairly green condition, and allowed to mature in course of transit. It is usually packed in baskets, each individual fruit being wrapped in paper, and then packed in straw, the basket being covered with coarse canvas. The writer says, "It is much to be regretted that a fruit so highly valued by those who have eaten it in the East should have been allowed to degenerate to such an extent as it has done in this island, for were the best varieties of trees imported from India, and proper attention given to their cultivation, I am of opinion that the demand would increase as the quality improved, and any trouble that had been taken would be more than repaid by the higher prices that would be obtained for the finer quality of fruit."

It is interesting to note that the Melon-Pear, which was noticed in the *Kew Bulletin* for January, 1893, as a comparatively new introduction, flourishes in Madeira. The plant was introduced to this country as *Solanum guatemalense*, but its correct botanical source was proved to be *S. muricatum*, Ait., a native apparently of Peru. Grown under glass in this country the fruit seems to have but little to recommend it, but in California it is said to be a very refreshing fruit, almost equal to a good Melon. It would therefore seem to be suitable for open-air culture. It is stated to have been introduced about 1837 into Madeira, where it thrives luxuriantly. It is easily propagated by cuttings or layers, and yields a large crop of its oval-shaped fruits, varying from 4 to 5 inches long, and having a flavour, it is said, somewhat between that of a Cucumber and a Melon, the latter flavour being most prominent. At one time Melon-Pears promised to become an article of export, but the demand for them has long since died out, and it seems that no export has taken place during the last three years, notwithstanding that the fruits are easily packed, and carry without detriment.

The fruits of *Pasiflora alata* and *P. edulis* are cultivated to some extent in Madeira. The taste for these fruits seems to be an acquired one, and the English palate does not yet seem to have become educated to such an extent as to cause shippers to undertake their exportation, though there is no difficulty in packing nor in the keeping properties of the fruits.

COLONIAL NOTES.

ROYAL BOTANIC GARDENS, CALCUTTA.

THE failure of the past rains proved fatal to a number of plants, which had been weakened by the preceding drought of 1895-96. The conservatories, which depend for their water on the tanks in the garden, suffered most, since these tanks had to be supplemented with water from the river, and the quality of the water thus supplied was found unsuitable for the more delicate plants. The principal improvement effected in the garden during the year was the relaying of the avenue leading from the river entrance to the great Banyan tree. The opportunity was taken to open out several vistas by removing trees, and before the end of the year the improvement of the Clarke and Thompson avenues was taken in hand.

With regard to plants of an economic value, Dr. Prain, the Curator of the Herbarium, was engaged during last cold weather in making observations on Mustards. To provide samples, patches of the various kinds of Mustard cultivated in Bengal were grown in the Sibpur Experimental Farm. Dr. Prain's results, which are said to be of great interest both from a botanical and an economic point of view, will shortly be published by the Department of Land Records and Agriculture. The results of a similar series of observations on the different kinds of Wheat, which were made by Dr. Prain in 1895-96, have been recently published. There was a large demand from planters and other persons during the year for *Rheea* plants, the interest in the cultivation of which has revived. The indents were met as far as possible, and the *Rheea* field has been thoroughly cultivated and manured in case the demand continues. Dr. King observes that the real difficulty in respect of *Rheea* seems at present "to be rather in securing a supply of the raw material than in finding a process to deal with it successfully after it has been put on the European market."

The herbarium, as usual, received special attention, and 13,989 specimens were added to the collections during the year.

The second part of the fifth volume and the seventh volume of the *Garden Annals*, were issued during the year. The former consists of descriptions with figures of about 100 new or interesting species, while the latter comprises a monograph on the Indian species of Bamboos, by Mr. J. Sykes Gamble, Director of the Forest School, Dehra Dun, with a description of every species of Bamboo found growing within the Empire, and a summary of its uses. It also contains a lithograph of each species, with careful analyses of the parts of the flower, and thus supplies a long-felt want; since, owing to the infrequency of their flowering the Bamboos have hitherto been little understood, and the different species have been very imperfectly recognised. Both Dr. King and Dr. Prain also contributed valuable papers on botanical subjects to the *Journal of the Asiatic Society of Bengal*. The thanks of all botanists are due to the government for sanctioning the publication of these most valuable publications.

The Lloyd Botanic Garden in Darjeeling suffered severely during the year under review, first from the unusual drought, and subsequently from the exceptionally heavy rains, which at the end of July culminated in a storm which destroyed many trees and plants. The repair of the damage done absorbed much money, which would otherwise have been spent on improvements. The lease of the patch of ground belonging to the Darjeeling Municipality, which has for some years been worked as a vegetable garden, expired during the year, and it was decided that the land should be made over to the Government for incorporation with the garden.

Proceedings of the Agri-Horticultural Society of Madras, January—March, include a notice of the annual flower-show held last February. The season having been adverse, the exhibits were, on the whole, scarcely up to their usual standard. The other contents include mention of seeds and plants exchanged,

and Reports of Proceedings.—The Report of the Annual Meeting of the above-mentioned Society, held on March 29, mentions the work done during the year, and gives particulars of expenses and receipts.—*Annual Report of the Botanic Garden, Grenada*, by W. E. Broadway, Curator. This mentions the fruiting of the Orange known as Grenadine, and peculiar to Grenada. The variety is said to be somewhat large, and coarse in size and flavour, and of use for preserving. Coffee, formerly much in demand, is now ready, quantities of fine plants awaiting a suitable market. The general condition of the gardens appears to be highly satisfactory.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

Platylinis (Dendrochilum) fliformis.—This elegant plant is now flowering from half-developed growths, and is one of the chief attractions in the Orchid-house. Many growers, knowing it to be native to the Philippine Islands, conclude that the plant requires great heat; but experiments made at Burford have proved such treatment to be distinctly injurious. In the East-Indian house or plant-stove the thin, grass-like leaves become infested with a small species of red-spider. The best position for the plant at all seasons is a moist, shady corner in the intermediate-house, suspended near to the roof-glass; and if water be plentifully supplied to the roots whilst growth is in progress, and an occasional syringing given overhead, this pretty species will succeed perfectly. The plant will root freely in shallow, well-drained peat and sphagnum-moss; if it requires fresh material or more root-space, the plant may be repotted into Teak-wood baskets or pans as soon as the flowers fade. The spring flowering *P. glumacea* having completed its new growths, should be given a cool, shady position in the same house.

Epidendrum.—*E. Stamfordianum* should not be given great heat and moisture. It is now starting to grow from the base of the current season's flowering-stem, and it should be placed in a light, moist corner of the intermediate-house, as near to the roof-glass as possible, where it should be watered with care. Repotting may be done before the new roots appear. Give plenty of drainage-material, and elevate the plant well above the rim of the pot, using two-parts of rough fibrous peat to one of sphagnum moss. The well-known *E. radicans* (rhaphyphorum) has been in bloom for several months, and as the plants are starting their next season's flowering-growth, the present spikes should be removed. It is a plant of scanty habit, and many of the shoots that did not flower this season have grown somewhat long; these may be cut in lengths of about 2 or 3 feet, and tied to neat stakes, making them up into a specimen plant. The old growths and flower-stems frequently send out off-shoots, which may be taken off and inserted thickly around the edge of a pot in well-drained sphagnum-moss. Throughout the growing season *E. radicans* should be kept moist at the root, and be properly syringed overhead. Examine frequently the points of new shoots to prevent mealy-bug.

Odontoglossum-house.—Plants of *Miltonia vexillaria* may be repotted, but before this is done, closely examine each plant for small yellow thrips, which lodge low down in the axils of the leaves; if any are found, a little sulphur, dusted into the growths, will drive them from their hiding-places, and at evening fumigate the house with the XL Vaporiser, which will destroy them. This *Miltonia* should be given a larger surface-space to root in than most Orchids require; therefore, use rather large, well-drained pots, placing the plants into a shallow compost of three-fourths sphagnum-moss, one-fourth fibrous peat, and a moderate quantity of small crocks, well mixed together. Elevate the plants well above the rim of the pot. After repotting, water sparingly with a fine rose-can, giving just enough to induce the roots to grow. As the young roots commence to ramble in and out on the surface of the soil, a more liberal supply will be necessary. Keep the plants in their present quarters until the nights become chilly, when they should be removed to a cool position in the intermediate-house. Plants of *Chysis bracteosa*, *C. laevis*, *C. Limminghii*, *C. Sedeni*, and *C. Chelsoni*, that have up to the present time been growing in the Cattleya-house, should now be removed to a light position in the East-Indian

house, where they will quickly finish up their growths, and become properly matured during autumn. They still require plenty of water at the root.

THE FLOWER GARDEN.

By CHARLES HERRIS, Gardener, Dropmore, Maidenhead.

Bulbs for Bedding.—The earliest opportunity should be taken to order bulbs that will be required for planting-out in the autumn. Where masses of colour are desired, beds may be devoted entirely to one kind of bulb; but if a continuous display is aimed at, it is well to plant beds with a groundwork of some other subject, as Pansies and Violas or Myosotis, Primroses, and such like—the bulbs to be planted about 10 or 12 inches apart, and between the other subjects. The latter will continue to bloom after the bulbs are past, and until the summer bedding is put out. For massing or planting among other plants, the following single Hyacinths are well adapted:—White-flowered: Madam Van der Hoop, Mont Blanc, Mina, La Grandesse, Grandeur à Merveille. Blue: Charles Dickens, Lord Derby, Orondates, Grand Maître, Car Peter, Couronne de Cèla, and General Havelock. Dark purple-red: Lord Macaulay, Incomparable, Norma (pale pink), Robert Steiger, Fabiola, General Pelissier (crimson), Lord Wellington (bluish), Gigantea (rose), Queen of Hyacinths (bright rosy-scarlet). Yellow Hyacinths are generally not well adapted for bedding, and may be omitted.

Tulips.—Belle Alliance, brilliant scarlet, early and dwarf; Canary Bird, early yellow; Yellow Prince, bright yellow; La Reine, white, tinged with rose; Keizer Kroon, crimson-scarlet, edged with yellow; Joost Van Vondel, crimson; Comte de Mirabeau, white; Proserpine, rich dark rose, fine; Duchesse de Parma, red and yellow; Couronne Pourpre, rich dark, dwarf crimson; Prince of Austria, fine orange-red, late; Queen of Violets, light violet, large and distinct. Of showy double Tulips, the following may be named:—Gloria Solis, large reddish-brown, with yellow edge; Tournesol, red and yellow; Yellow Tournesol, bright golden-yellow; Murillo, pale rose; and La Candeur, white, rather late.

Narcissus, Crocuses, Chionodoxas, and Scillas should be included in considerable quantity in any spring-flowering collection of bulbs. If the Chionodoxa is planted about a rookery the effect is good, and they reproduce plants freely from seeds, self-sown.

Amaryllis Belladonna, the Belladonna Lily, should be purchased and planted now. If planted at the foot of a south wall, in light rich soil, and about 6 inches under the surface, they will flower freely for years, the bulbs will increase, and as long as freedom of flowering continues, it is not advisable to lift them. Established bulbs growing in a position as described above, are now throwing up numerous flower-spikes.

Yew and other similar Hedges should now be given their annual clipping. If cut at this season, when growth is completed, they require little extra attention throughout the year.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Fig Trees.—Be careful that these are afforded sufficient water at the roots. Thin out surplus growths, pinching the points of those retained for yielding fruit next year at 2 feet length, allowing weakly-growing shoots to make a few inches more growth before nipping the points out. This, in addition to promoting the formation of embryo fruits, will cause a more equal distribution in the flow of sap. Secure leading shoots in position with nails and alureds. Where the walls are provided with wires fixed to eyes driven into the brickwork about 1 inch from the wall, the wires running horizontally at 9 inches apart, bands of raffia or bast should be used, care being taken in both cases to allow room enough in the shreds and ties for increased growth. A watchful eye must be kept on fruits approaching ripeness, otherwise birds, wasps, and flies will not only disfigure, but actually destroy many of them. Half-inch meshed netting, if placed over the trees, and secured pretty closely to the wall at bottom and top, and kept out a few inches from the fruits by forked sticks being placed between the wall and netting, will save the crop from being injured by the birds. Wasp glasses three-parts filled with sweetened beer and suspended at short intervals over the individual trees will entrap the wasps and flies. The glasses should be emptied occasionally, refilled with the syrup and put in position again. In addition to these wasp and fly-traps the old-fashioned, but

nevertheless effective, hand-light traps should be set under fig-walls, or, in fact, any part of the garden where ripe fruits—Figs, Plums, Pears, and Gooseberries—require protection from their attacks. Place a hand-light about one inch above the ground. Make a hole in the top of the cover, which is placed on the light, then drop another hand-glass and cover over the first one, and stop any spaces there may be between the frames of both glasses to prevent the escape of the wasps and flies which ascend to the "top story" as soon as they have feasted on the damaged fruit, which may be placed on the ground-floor as a decoy. The glass, excepting the hole in the top of lid of bottom hand-light through which the wasps enter the trap, should be whole. In addition to practising the above-mentioned measures with a view to saving any Figs from disfigurement of the kind indicated, I have placed the individual fruits of such large varieties as Castle Kennedy and Brunswick in muslin bags, made with a running-string at the top.

THE KITCHEN GARDEN.

By W. FORB, Gardener, Highclere Castle, Newbury.

Autumn-sown Onions.—If seed has not yet been sown the work should be done with little delay, as the young plants need to attain a fair size before winter sets in. It is equally important that the seed be not sown too early, especially after such warm weather as we have had recently. Germination will be rapid, and if the plants become too large before growth is checked, they are very liable to start prematurely to seed in the spring. If the soil be light and porous a dressing of salt may be given before sowing, and it will be of service in checking the attacks of grubs, &c.; but if this be naturally wet or of a heavy texture, apply a good dressing of soot and cinder ashes, the latter to be well incorporated with the soil whilst digging. Make the soil moderately firm before sowing. Drilling being generally preferable to sowing broadcast, draw out rows about 9 inches asunder and about an inch in depth. If young Onions have to be provided at all times for salad purposes, it is advisable to sow an extra breadth at this date for use through the autumn. The Roccos are general favourites for this sowing, the selection known as the "Golden Rocca" being the best in appearance and good in quality, a good selection of White Lisbon being useful for early work. Any bulbs still left over from last autumn's sowing should be taken up and harvested without loss of time, as they will now be forming fresh roots and will soon start into growth and be utterly spoiled.

Onions, Spring-sown.—Keep these free from weeds and rubbish. Press down the tops carefully with the back of a wooden rake, to check their growth and assist maturation. When growth is completed, pull them up and spread thinly on the ground, turning every day till thoroughly dry, when they should be removed to a dry, cool shed, and stored thinly till they can be tied in ropes or bunches. Those sown early in boxes under glass, and grown on for exhibition or other special purpose, will generally have attained their full size, and should be pulled up and laid thinly on a greenhouse stage for a few days, or failing this, in a cool, airy shed, where they will become thoroughly matured, and as a consequence keep much better through the winter and early spring. Do not leave them on the ground after pulling, if it is necessary to keep the bulbs sound through the winter.

Mushrooms.—Where Mushrooms are required through the winter, it will be necessary to commence collecting the materials for making the beds. To ensure a regular supply from November onwards, bed-making should begin in September, and if the droppings from three or four horses only are available, this must be collected daily, and spread thinly in an open shed secure from rain. Turn this over occasionally, and when sufficient has been collected, throw it into a heap to ferment and sweeten, turning every day for a week, by which time all rankness will probably have disappeared from the manure, the bed being then made according to former directions, and spawned at 70° or 75°. For a regular supply a bed should be made every three weeks through the autumn.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Melons.—Plants that will soon ripen fruits must be carefully watched, withholding water until the leaves show signs of flagging. If they be given much water at this stage, the fruits will be poor in flavour, even

if they do not crack. Give air freely during favourable weather, and regulate the growth as required. Plants carrying fruits about to swell may be top-dressed or given a little manure-water at a temperature of 90° to 95°. Keep the laterals pinched, and close the house early after a good syringing, allowing the temperature to run up to 95° or 100°. Avoid cold draughts when ventilating, especially in the morning. Later plants that will ripen fruit in October will need the growths tying in, and all side-shoots should be rubbed off till the trellis is reached. After this, allow just sufficient to furnish the wires. Stop the shoots one leaf beyond the fruit, and as the flowers open, keep the atmosphere a little dryer, and pay careful attention to fertilisation. Keep the bottom-heat as even as possible at about 85° by adding a few additional leaves or otherwise. An odd plant or two may still be put into pots if very late fruits are desired.

Vines.—Early houses from which the fruit has been cut, containing trees that have to be started very early, may have all superfluous growth thinned out, leaving just the main shoots shortened back to about half-a-dozen leaves. By this means the buds at the base will plump up, and the Vines will benefit generally. Do not let them suffer from being too dry at the roots. Syringe them occasionally to keep the foliage clean and healthy as long as possible. Keep houses containing ripe fruit cool and airy. Vines in later houses should be looked over frequently, and all bad berries removed. Keep the lateral growth in check by occasionally removing a little. Make ready the tiffany, Nottingham netting, or whatever material is used for the purpose of preventing injury from wasps. Nottingham or hexagon netting is the best, as it admits much more air than the ordinary tiffany.

PLANTS UNDER GLASS.

By G. H. MAYOOR, Gardener, Luton Hoe Park, Luton.

Cyclamen.—Bulbs of last year that have been at rest during the summer in cold frames should be potted-up without delay. Use a compost of two parts fibrous loam, one of leaf-soil, one of decomposed manure, and a liberal addition of sharp silver-sand and charcoal. Clean the bulbs from the old soil, and pot them direct into the flowering-pots, which should be those about 7 inches in diameter for good-sized bulbs. When re-potting has been finished, place the plants on inverted pots in a cold frame, and syringe them once or twice on all bright days. Fumigate frequently to prevent thrips.

Cinerarias.—The earliest plants now require their final shift into 6 or 7-inch pots. Afterwards the plants must be shaded, unless the aspect be a north one, and the atmosphere kept moist. Pot-on successional plants before they become root-bound, and keep green fly in check by fumigating occasionally, for which the house should be prepared by keeping it drier.

Herbaceous Calceolarias.—Prick off plants from the seed-pans as soon as they are large enough to handle, putting them into 2½-inch pots. The compost should be a little stronger than that recommended to sow the seeds in. Give them a north aspect, and sufficient room that air may freely circulate between each. I do not recommend fumigating these Calceolarias during the first stages of growth, as the young, tender leaves often become injured by it. On the first appearance of green-fly, remove the pest by means of a camel's-hair brush.

Vallotas.—These pretty bulbous plants do not require to be potted frequently, but if this has not been done for several years, the present time will be a suitable one for carrying out the work. Prepare a mixture of three parts good loam, one of leaf-soil, and one of sand. Shake away the whole of the old soil from the bulbs, and put five or six of the largest into a 6-inch pot, or more in proportion to the size of the pot it is intended to grow them in. Keep the bulbs well down in the pots, and do not give much water until the flower-spikes are seen. Afterwards they will require much the same treatment as Hippeastrums.

Winter-flowering Begonias.—Give liberal waterings with weak liquid-manure, and keep the plants steadily growing in a position near to the glass. B. socotrana that has been at rest during the summer should now be shaken out and re-potted. This does best in small pots of 4 to 5 inches in diameter; and if it be desirable to increase the stock, place two or three of the little bulbils into 3-inch pots, which, if not potted on, will make small but pretty plant

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	AUG. 24.	Royal Horticultural Society's Committee, at Drill Hall, Westminster.
		Royal Oxfordshire Horticultural Society's Show, at Oxford.
		Brighton and Sussex Horticultural Society's Show (two days).
WEDNESDAY,	AUG. 25.	Kingswood Horticultural Society's Show.
THURSDAY,	AUG. 26.	Swansea Horticultural Society's Show.
FRIDAY,	AUG. 27.	Royal Horticultural Society of Ireland's Show.

SALES.

MONDAY,	AUG. 23.	Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs and Lilies, at Stevens' Rooms.
WEDNESDAY	AUG. 25.	Dutch Bulbs and Lilies, at Stevens' Rooms.
THURSDAY,	AUG. 26.	Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	AUG. 27.	Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—61°.

ACTUAL TEMPERATURES:—

LONDON.—August 18: Max., 78°; Min., 59°.

PROVINCES.—August 18 (6 P.M.): Max., 66°, at Margate; Min., 53°, at Sumburgh Head.

A HYBRID *Aristolochia* is a novelty, so much so that we can find no record of one, albeit the structure of the flower would lead one to suppose that hybridisation by means of insects must occasionally occur. The new-comer is not only a novelty, but as the figure shows, it is decidedly a good-looking one. Mr. J. M. BELL, gardener to Rev. Canon PRETTYMAN, Louth, is to be congratulated on his success, and on the very interesting addition he has made to our stove climbers. We learn that the hybrid in question was raised out of *A. brasiliensis* by pollen of *A. elegans*.

"To get at," says Mr. BELL, "the stigma, I cut a triangular piece out of the perianth, and having applied the pollen, fixed the bit down again with floral gum. I was delighted to see next day that fertilisation had begun, and by September the seeds were ripe. I sowed in March, 1895, and in a month they germinated well. I kept a good stock, part of which went to Orwell Park, the remainder I destroyed. During the summer the seedlings made but little progress. Some would show signs of growing well, and without any apparent cause would die. I kept one alive, and this year it began to flower. I then had procured a plant of *A. gigas Sturtevantii*, which has grown well, but never flowered. In pruning last spring I kept a half-ripe piece of wood, and grafted it on a plant of *A. elegans*, and, curiously, this has flowered three times. The first time soon after grafting them the plant rested, broke strongly, and again flowered, rested once more, and is now once more in flower."

The parent plants of the hybrid belong to two very distinct sections of the genus. In the section to which *A. elegans* belongs, the perianth expands above into a broad, shield-shaped limb, the upper portion of which is much larger than the lower, although it is not

divided into an upper and a lower lip (fig. 36, p. 127). In *Aristolochia brasiliensis* the limb of the perianth forms two distinct lips, the upper long and folded in the middle, the lower much larger, like the lip of an Orchid, provided with a stalk and with two rounded horizontally-spreading lobes crumpled like a Poppy petal, cream-coloured, with a thick network of purplish spots.

In the hybrid the perianth, including the tube, is about 8 inches (20 cent.) long, the distended tube about 2½ inches (7 cent.), creamy-yellow with purplish blotches along the nerves. The lip, which is so important a feature in *A. brasiliensis*, is here obsolete. The upper lip is intermediate in shape between that of *A. brasiliensis* and that of *A. elegans*, about 4 inches long (10 cent.), 7 to 8 cent. in greatest breadth, oblong, retuse, slightly crumpled, cream-coloured, thickly bestrewn with arborescent purplish spots; the throat of the perianth is clear yellow, as in *A. elegans*, with numerous purplish radiating veins. The interior of the ventricle or distended position of the tube is covered with fine downy hairs; at its junction with the tube it has on one side a thick fleshy cushion-like prominence, beneath which are two patches of very dense purplish hairs, as in *A. brasiliensis*. The staminal column at the base of the ventricle is erect, about a quarter of an inch (6·7 mill.) long; lobes oblong-obtuse, anthers linear, resembling those of *A. brasiliensis*. The leaves, too, are like those of *A. brasiliensis*, but less glaucous.

Orchids.*

OF the numerous publications with which LINDLEY enriched botany and horticulture, none has more permanent value than the "Genera and Species of Orchideous plants." Well arranged, with clear, concise, characteristic descriptions, orderly synonymy and useful notes, from which all verbiage and unnecessary discussion are removed, it was at the time of publication a model monograph. The last sheet is dated October, 1840; the publication of the work having been commenced in April, 1830. Since that time the knowledge of Orchids has enormously increased, mainly in consequence of their general cultivation. Horticulture in this case has greatly added to the resources of botanists. At that time there were but few species grown; now, as we all know, the numbers are vast. Some species are even threatened with extinction—a calamity partially compensated for by the greatly extended knowledge of their structure and habit, which cultivation has rendered possible. ROBERT BROWN, the two HOOKERS, BRONGNIART and others have greatly added to our stores of knowledge. REICHENBACH devoted his life to their investigation; he published much, but became overwhelmed with detail, and left no general synopsis, unless indeed, which is not very likely, it be shut up in Vienna with his herbarium. In recent times BENTHAM completed a masterly survey of the genera of the order; Sir JOSEPH HOOKER has quite lately elaborated the Orchids of British India; COGNIAUX is engaged on those of Brazil; and PFITZER, relying more than his predecessors on vegetative characters, has rearranged the genera in a manner that has been followed in some recent books to the terrible multiplication of synonyms. ROLFE has published largely on the order of late years in the *Journal of the Linnean Society*, in these columns,

* *Orchidacearum Genera et Species expositis*, Frits Kraenzlin Vol. I., fasc. I. (Berlin Mayer & Müller.

and in those of the *Orchid Review*. It is also generally understood that Mr. ROLFE is collecting material for a new "Genera and Species of Orchidaceous Plants." As Mr. ROLFE has all the resources of Kew at his disposition, it is clear that he is particularly well placed for the prosecution of such a work. Some preliminary monographs have already been published by him, such as the revision of *Apostasieae* and *Cypripediæ*, published last year, but which is not, as far as we see, referred to by Dr. KRAENZLIN in the fascicle before us. This fascicle contains sixty-four pages, the number of species described being about the same number. As it is estimated that some 5,000 species are now known, the reader will be able to form an estimate of the number of fascicles that will be required to complete the work.

Dr. KRAENZLIN begins appropriately enough with the *Apostasieae*, which, with their simpler and more regular structure, form morphologically the introduction to the *Orchidaceae*. They are exceedingly interesting to the student, but not highly esteemed by cultivators. Dr. KRAENZLIN'S method is to enumerate the genera, supply references to the literature, and then to give a Latin description. After this follows a "clavis specierum," the value of which can only be tested by actual trial, and then the full description and synonymy of each species in Latin, with explanatory notes in German.

The *Apostasieae* are not very numerous, and we turn with some anxiety to the genus *Cypripedium*, of which fifty-five species are described in the present instalment, and here we are relieved to find that Dr. KRAENZLIN accepts the genus mostly in the old Linnean sense, and in that which was adopted in the *Genera Plantarum* of HOOKER and BENTHAM. Thus, the *Selenipedium* and *Cypripedium* *Selenipedilum* and *Paphiopedilum* of some authors either disappear or are adopted, properly enough, as sectional divisions. Orchid growers have their rights, like other people, and we think they are quite justified in protesting against the wholesale changes of nomenclature which the adoption of *Paphiopedilum* necessitates. The folding of the leaves in the young state, the number of compartments in the ovary, and the nature of the seed-coat, no doubt constitute an aggregate of characters useful for sectional divisions. Their adoption as generic characters involves changes, the inconveniences attaching to which are by no means outweighed by a supposed more perfect arrangement.

On the other hand, Dr. KRAENZLIN'S notions of affinities are peculiar, one illustration of which we may give by stating that *Cypripedium* *Rothschildianum*, now generally considered the same as *C. Elliotianum*, is placed in one section, while *C. Elliotianum* figures in another. *Uropedium* *Lindenii*, as has been shown in these columns, is a peloriote form of *C. caudatum*, and should hardly be cited as a variety of *C. caudatum*. Other species have apparently wandered away from their next affinities, as they are generally understood. More use might, perhaps, have been made of the form and appearances of the staminode, which we have found useful in determining species and as a guide to the parentage of hybrid forms. Some appearance of hasty publication is also shown in the erroneous citations, such as Barton Fl. N. America for *Paxton's Flower Garden*, in the want of uniformity in citing the references, and in the punctuation.

A concise and accurate revision of this large and important family is one of the greatest

wants of systematic and particularly of horticultural botany. Dr. KRAENZLIN's book cannot be concise, but it should be as accurate as circumstances will allow. By the time it is finished, perchance the Reichenbachian herbarium will be unsealed, and—What then?

and present *employees* of Mr. ARNOLD ALDRIDGE, of Manor Farm, Petersham, gardener and horticulturist, were present at a supper given in honour of Mr. ALDRIDGE's diamond jubilee in business. It was in 1837 that he first commenced business, and many of the hands thought the present year a fitting occasion to present him with a framed and illuminated testi-

evening complimentary speeches were made by the chairman, the vicar of Petersham, Mr. GROVES, Alderman MARSH RAY, M. HOF (of the foreign section of the firm), and Mr. J. ALDRIDGE.

THE SHREWSBURY SHOW.—The severe gale and destruction of exhibits at the York Gala has

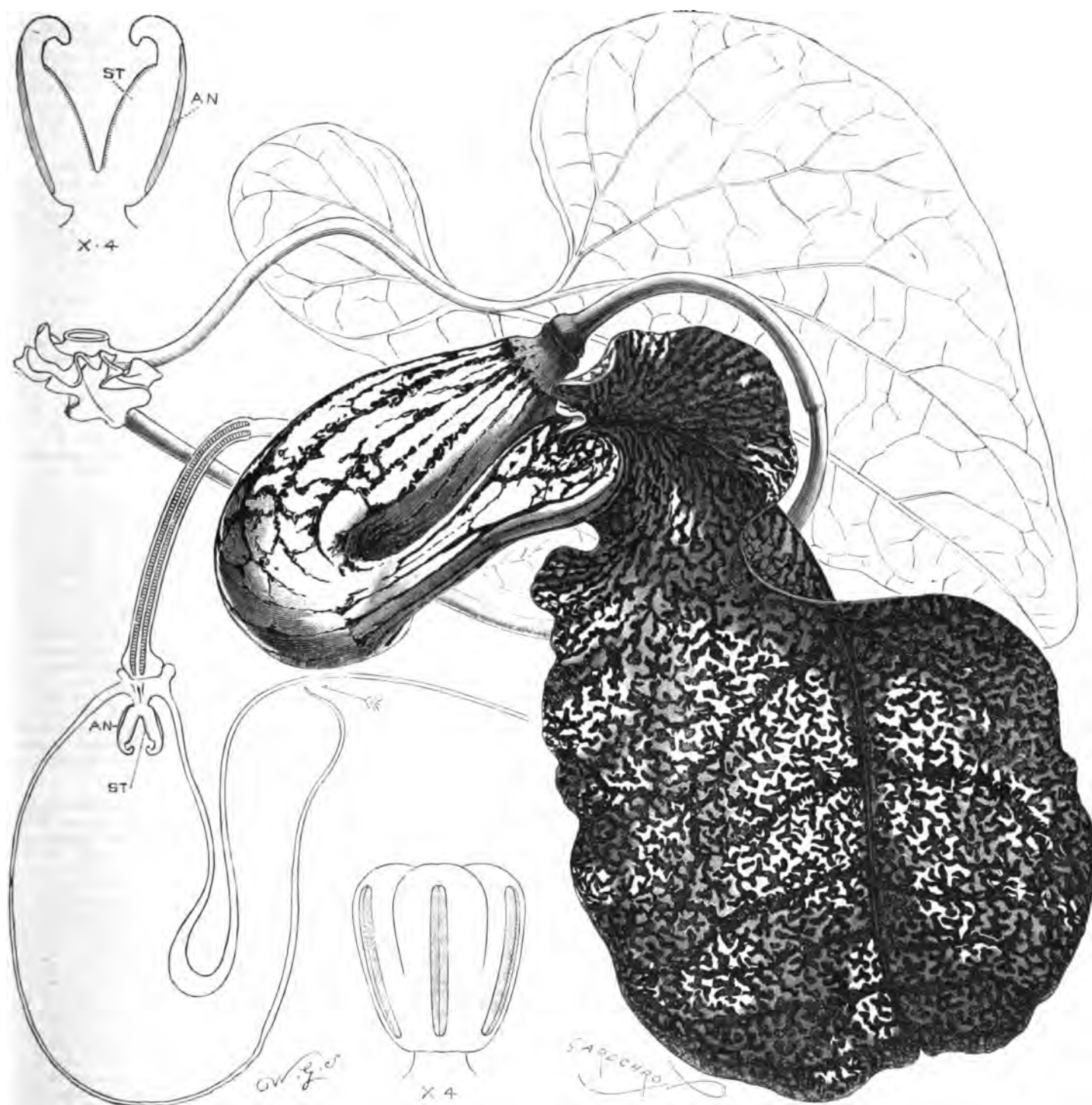


FIG. 36.—THE FIRST HYBRID ARISTOLOCHIA. AN, ANTHER; ST, STIGMA. (SEE P. 126.)

A LECTURE ON PLUMS will be given by Mr. A. H. PEARSON, on Tuesday next, at the meeting of the Royal Horticultural Society, in the Drill Hall, James Street, Westminster.

PRESENTATION TO A HORTICULTURIST.—A gathering of a unique character took place on Saturday evening at the "Dysart Arms," Petersham, near Richmond, when over a hundred of the past

monial of the esteem in which they held him, and also with a lounge chair. Mr. JAS. WALKER, of Church Farm, Ham, Surrey, presided; and besides the guests of the evening, Mr. ARNOLD and his sons, there were present the Rev. W. H. OXLEY, vicar of Petersham, Alderman MARSH RAY, Mr. C. E. BEACH, J.P., and a large number of local tradespeople. The presentation was made by Mr. UZZELL, on behalf of nearly one hundred men; and during the

found a counterpart at the Shrewsbury Show held during the present week. Fortunately it did not occur on the morning of the exhibition, but at about mid-day on the previous day. It resulted in the complete collapse of the immense marquee in which the groups and the collection of large plants were at the time being staged. The injury done under this section was considerable. Messrs. CYPHER and FINCH appear to have been the greatest sufferers, sev-

of their specimens being irreparably damaged. Another marquee was also blown over, but this does not appear to have contained any exhibits. One of the many refreshment tents also suffered considerably. The gale appears to have blown from the west throughout the previous night, terminating in a sudden cyclone, reaching from Ruabon on the west on to Shrewsbury and eastwards to Stafford. Had the gale been one day later, the results must have been disastrous. This is the second occasion on which Mr. J. CYPHER has been a sufferer this season, he having also been an exhibitor at York. Previous to the catastrophe at Shrewsbury, it is said Mr. CYPHER, from past experience, cautioned the men in charge of the marquee in question in sufficient time to have averted in some degree the wreck which ensued, but his advice does not appear to have been acted upon in time. The executive at the Shrewsbury Show, under the energetic guidance of the Hon. Secs., Messrs. ADNITT and NAUNTON, immediately set to work to erect other tents, and thus much inconvenience was averted. Subsequent information, detailed in another column, shows that the exhibition was a great success, the display of fruit and vegetables being extraordinarily large and correspondingly fine in quality. The ornamental groups were also of great beauty. The visit of the deputation from the Royal Horticultural Society has given great satisfaction, and the Council will have had an opportunity of seeing how they do things at Shrewsbury. Mr. MCINDOR, whose portrait we give on p. 129, may be congratulated on the triumphant way in which he has illustrated by his fruits the care and skill of the British gardener. See also page 134.

BICOLOR GLOXINIAS.—Mr. SMITH, gr. to H. J. CLATWORTHY, Esq., Weston-super-Mare, sends us a flower of a Gloxinia in which the two upper lobes of the corolla are of a deep violet colour, whilst the three lower lobes are rosy-pink. The tube is wholly white. Mr. SMITH says that all the flowers on this particular plant are two-coloured in this way. We have never before seen anything of the kind in Gloxinias, and advise our correspondent to keep the plant and save seed from it.

THE KING OF SIAM.—On Sunday morning His Majesty King CHULALONGKORN, accompanied by Prince SAMPASANT, Baron SUNTHORN, and other members of his suite, paid a visit to Mr. WILLIAM BULL's establishment, King's Road, Chelsea. A visit was also paid to the Nurseries of Messrs. J. Veitch & Sons.

MR. A. M. ELCOMBE, of the firm of ELCOMBE & SON, Seed Merchants and Nurserymen, Romsey, has been appointed a Justice of the Peace for the borough of Romsey.

SOCIETY OF JERSEY GARDENERS.—The annual picnic of the above Society was held on Monday, August 9, when about seventy members and friends gathered together at 1 o'clock at St. Helier's Wharfedale for a drive to Bonley Bay. Proceeding through St. Lawrence Valley, with its shady lanes, the first halt was made at St. Ouen's Manor, the beautiful grounds of Col. MALET DE CARTERET. This is one of the oldest ancient houses and grounds in the island. From thence to Creux Moie, or what is more commonly known to visitors as the Devil's Hole, and home in the evening.

ROSES IN THE PRINCIPALITY.—We had recently the pleasure of a visit to the nursery of Mr. STEPHEN TRESDER, situate about a mile out of Cardiff. Hardy trees and shrubs, Conifers, &c., are grown here, but the specialty consists in the Roses. Some of the Teas are planted between great Privet hedges 8 or 10 feet high, which serve to protect them against cold east winds, very prevalent in the district in late spring. Both these and others in the open had made most satisfactory growth, and were exceedingly healthy. The nursery is not a large one, and the space being limited, only the very best varieties in each section are grown. Hybrid perpetuals and Noisettes, like the Teas above referred

to, were looking well. Mr. TRESDER showed us a white Tea, which he described as a sport from Anna Olivier. The sport occurred in this nursery a year or two ago, and, like most sports, in every particular but colour of flower it appears to resemble the parent plant. The blooms are very pretty, slightly lemon-coloured in the centre, and the plants were covered with them. Mr. TRESDER has a great opinion of Medea, a Rose sent out by Messrs. W. PAUL & SONS a few years since. The nursery stock generally exhibited first-class cultivation.

FLOWER-CULTURE IN SCHOOLS.—A very interesting addition has been made to the work of the Agricultural and Horticultural Association, which has done so much to promote "gardens of taste," by establishing industrial flower-shows. The new effort aims at reaching the children in our public schools. During the past spring the Council of the Association commenced by offering prizes for the culture of pot-plants to the children in twenty-seven London schools. Prizes were offered for every class, as well as for each school. The flowers to be grown were Tom Thumb Nasturtium, Candytuft, Ten-weeks Stock, German Aster, Virginian Stock, and Godetia. The prizes consisted of garden-tools, floral certificates, and bound copies of the Association's Annual, "One-and-All" Gardening. Each little competitor was supplied with the necessary seeds and very detailed instructions for carrying out the work, a nominal charge of one penny being made in each case, to give the children a personal interest in the success of their attempts. No fewer than 1627 competitors entered, and the results were exhibited in twenty-seven little flower-shows before the recent breaking-up for the holidays. So much interest and enthusiasm was shown, that Mr. EDWARD OWEN GREENING, at whose instance the experiment was made this year, hopes to see a great development of the movement in future years.

PRESENTATION TO MR. O. THOMAS, FROGMORE.—On Saturday last an interesting ceremony took place at Frogmore, when the foremen and young gardeners presented Mr. THOMAS (Her Majesty's Head Gardener) with a handsome silver waiter, and an address of congratulation on his silver-wedding day. The movement originated with the foremen, who wished (as a body) to acknowledge Mr. THOMAS's kindness and courtesy, also his assistance and encouragement to the young men in various ways. Mr. J. CHANNELL, as Chairman of Committee, introduced the subject for which they were assembled, and called on Mr. T. EDWARDS (Hon. Sec. and Treasurer) to read the address. This, after offering their congratulations to Mr. and Mrs. THOMAS on their silver-wedding, stated how gladly they availed themselves of the opportunity to testify to the invariable courtesy of Mr. THOMAS to his men, and of the respect and esteem in which he was held by them, also to assure him that this was a spontaneous expression of their feelings, and an acknowledgment of much kindness. Mr. THOMAS, in reply, said it certainly was most gratifying to him, and he could not adequately express his thanks, or say how much he appreciated their kindness. He assured them he should always look back on that day with pleasure, and value their handsome present, as would each member of his family. Rising again shortly after, Mr. THOMAS said he wished to propose the health of his foremen, and was glad of the opportunity of stating how well he was supported by each in their various departments. Whatever may be thought by others, he could say that the duties of the foremen here demanded constant attention, and that the position of those in authority in the Royal Gardens was no sinecure.

HOME CORRESPONDENCE.

JAPANESE BAMBOOS.—I have received from Japan this spring two Bamboos which appear to be new to western gardens:—1, *Phyllostachys fulva* (Japanese name, Ogon chiku), a *Phyllostachys* of the

same type as *P. nigra*, not yet sufficiently advanced for me to be able to describe it in detail, promises to be very ornamental. 2, *Arundinaria Metake* (Japanese name, Kanéyama Daké or Shakutan chiku), a dwarf species closely allied to *Arundinaria Veitchii*. Both these species should, from their geographical position in the Japanese Islands, prove hardy in the average English climate. A. B. Freeman-Milford.

ROMNEYA COULTERI is very fine here this season. There have been scores of bloom out at the same time, and it is quite hardy with us, having been planted five years since. It flowered well last season, but not so abundantly. It grows at the foot of an east-aspect wall, and has no other protection. In this situation it has withstood 28° of frost, and I think such a beautiful plant should be more generally known and cultivated. Thos. Denny, Down House Gardens, Blandford.

GERBERA JAMESONI.—This fine Composite has been flowering for some time past in the Edinburgh Botanic Gardens, where, until lately, it has been grown in a pot. It produces freer growth, however, and is more floriferous when planted in a warm border. If placed in a border with a sunny exposure against a building, and protected in the winter, as is the case at Cambridge, where it succeeds so well amongst hardy Cacti, an abundance of its scarlet inflorescences is produced. Under cultivation, the ray-florets are said to lose a great deal of their intense colouring, though they are still among the brightest of such flowers. [The colour is variable. Ed.] R. L. H.

FROST IN JULY.—I can assure "E. M." that my glass was in perfect order at the time, and also that vegetation showed decided signs of frost, but that being so dry at the time very little harm was done. John Kitley, Castle Nursery, Warwick.

THE CHERRY PLUM.—There are several trees of the Cherry Plum (*Prunus myrobalana*) growing in the orchard here, and I am told that seldom do the trees fail to bear fruit. Frequently the branches are so heavily laden that support has to be used to prevent their breaking off. This season the fruit is very fine indeed. We have both the red and yellow varieties, and if the fruits are not first-rate for dessert, they make splendid tarts or preserve. In a season like the present, when plums are very scarce, they are most useful. Never have I seen the Cherry Plum so fine. The soil is resting on chalk, and we are situated about a mile from the sea. The sprigs of fruit forwarded I have sent to bear out my remarks, and which I think you will agree are very fine. H. Markham, Northdown, Margate. [Could hardly be more heavily cropped. Ed.]

THE FRUIT FAILURE.—I read Mr. Blackmore's note respecting the causes of the general failure of the season's fruit crop with much interest, because his view corresponds so exactly with that I have endeavoured to express elsewhere. Nothing is easier than to set down all our troubles to frosts and cold winds, but if these certainly very unwelcome visitations did all the harm to the spring bloom attributed to them, how came it that the harm was so partial and so erratic? On the frost hypothesis I have been puzzled to understand why some trees should not have set a bloom, and some others close by have carried heavy crops of fruit. Of course, it may be said that Mr. Blackmore's hypothesis should equally apply to all trees; but then my experience has been that whilst surface-rooting and comparatively young or free-growing trees have little fruit, old, or large, or somewhat checked or stunted trees, especially those having deep roots, have fruited very well. Clearly it is a matter that needs elucidation, and Mr. Blackmore, in showing how the buds last autumn were active, growing trees were demoralised, those on old or deep-rooted trees suffering nothing, comes nearest to that elucidation. Then again we had a wonderful flush of bloom. Pears were specially floriferous; indeed, in passing by train I could but notice that Mr. Blackmore's trees were such showy masses of bloom as I had never before seen. How often in the history of fruit culture has it not been the case that wealth of bloom has preceded great poverty of fruit. Is it not obvious that when such is the case, the bloom may be, and doubtless is, very largely infertile. Possibly a severe thinning of the fruit-buds ere the bloom advanced, would have done some good. Perhaps it would have been useless. I do not know that anyone experimented in that direction. It is really

important, however, we should understand exactly how much or how little harm the spring frosts did to the bloom. *A. D.*

A NEW CARNATION SOCIETY.—A few enthusiastic florists at Southampton purpose forming a society in that town, to be termed the Southern Counties' Carnation Society. Carnation florists usually have tastes for other plants also, and there seems to be no reason why the new body should not include itself the Southern Counties Florists' Association, and then include within the scope of such body, Auriculas, Polyanthus, Tulips, Pansies, Roses, Carnations, Dahlias, and even Chrysanthemums. Such inclusion would enable so many amateur florists of

THE KITTATINY BLACKBERRY.—This really very nice and truly marvellous cropping American Blackberry, shown at the recent Drill Hall meeting by Mr. Wadds, of Cliveden Gardens, seems to do much better on the banks of the Thames than it does generally. The Parsley-leaved *Rubus laciniatus*, it is well known, will succeed well on moderately dry soils, if they be but deeply worked, and where properly pruned and fed, produces splendid crops of fine fruit. But the Kittatiny is somewhat earlier in fruiting than is the other variety, and if it can be, as at Cliveden, accommodated with a deep, retentive soil, that is, even in winter, partially under water, it will do well. The canes or rods shown at the Drill Hall were about 5 feet long, and very heavily laden

a thousand parts of water—that is to say, 1 oz. of the sublimate to 62½ lb. of water. Immerse the tubers in the solution for two hours, shortly previous to planting; take out and allow them to dry, when they may be cut if required. It is advisable to choose sets that are not themselves affected with the scab. *J. J. Willis, Harpenden.* [Care must be taken with this highly poisonous substance. *Ed.*]

ASTERS INJURED BY WORMS.—I grow a good many, and have frequently had them attacked by some kind of small worm. A strongish watering of dissolved nitrate of soda has generally settled the matter, and greatly benefited the bloom. *J. Z. L.*

THE LONGEVITY OF SEEDS.—In reference to a paragraph in your last issue, I am inclined to think no time will destroy some seeds under certain conditions. In 1894 I double dug 20 inches deep some turf for planting. The turf is a portion of the park here, and was enclosed from Needwood forest in 1337. As far as I know it has never been disturbed, but as soon as it was dug a quantity of Gorse sprang up in all directions. There is no Gorse near it. I give the fact for what it is worth. *J. Z. Levitt, Wychnor Park, Burton-on-Trent.*

THE LONGEVITY OF SPORES.—Your short note in last week's issue upon Mr. Charles Naudin's contribution to the *Bulletin of the Société Nationale d'Acclimatation* on "The Longevity of Seeds and their Preservation in the Earth" is particularly interesting, as indicating the possibility of obtaining rare plants from seeds deposited by them *in situ*, the plants themselves, it may be, being difficult of removal, or, being removed, perishing in transit, or subsequently. A particular instance of this kind within my own knowledge occurred some years ago in the case of a finely-crested form of the Parsley Fern (*Allosorus crispus*) found at Leathwaite, which, in the hands of Mr. J. M. Barnes, thrived for some years, affording me an opportunity of seeing it; but then, as is frequently the case with this species under culture, it got out of condition, and perished. As it represented the only recorded variety in the species, and was a very good form in addition, the loss was much regretted; but it occurred to Mr. Barnes to make a fresh search at the spot where it was found, and which fortunately could be determined exactly. He did this, but failing to find another specimen, it occurred to him to bring away a quantity of the earth with him. This earth he distributed over prepared pans, with the result that he obtained a liberal crop of the characteristically-crested plants, the spores of which had evidently been lying dormant in the soil. Considering the great difficulty, often insurmountable, experienced by observant travellers in not merely securing new, or presumably new, plants which they meet with, but in maintaining them subsequently in a living state until they can be suitably installed for cultivation, a very valuable suggestion is embodied in such recorded facts as these. Rare Ferns and Orchids must, as a rule, spread a liberal annual crop around them of these spores and seeds, and thus afford ample opportunities for their introduction in a form which presents next to no difficulty of transport; all that is necessary being to follow Mr. Barnes' procedure, and spread the soil thinly over properly-prepared compost, and subject the same to the temperature proper to the habitat whence it was derived. Since, too, spores and many seeds are disseminated by the wind to considerable distances, travellers would do well to collect surface soil in likely places where rare plants are prevalent and collections rare; it would be odd indeed if the resulting crop would not yield a host of interesting things with a fair percentage of new ones. With regard to the *Helianthemum* seeds found in soil from the Sahara deserts, their presence there does not necessarily imply longevity, since assuming the flower to be indigenous, they might be annually distributed from far distant oases by the wind-storms peculiar to that region. Sunflower seeds are sometimes used as food, and they might, if found on the recognised caravan tracks, be simply dropped *en route*. In any case, to spread such imported earth over flower-beds introduces a great element of uncertainty in the ultimate results. *Chas. T. Drury, F.L.S.*

BRICK-COVERED VINE-BORDERS.—Your correspondent, Mr. Markham, is evidently not favourably impressed with a brick covering on Vine-borders. I have found it to answer admirably here—indeed, far beyond my most sanguine expectations; in proof of which, I invite Mr. Markham, or anyone else interested in Grape-growing, to pay me a visit. The visit must be within the next ten days or a fortnight, as we are now cutting from the house to which I



MR. J. A. S. McINDOE.

Winner of the First Prize in the Victorian Fruit Class at the Shropshire Horticultural Society's Show.

(See p. 134.)

erze tastes to associate themselves with the movement. It may be urged that exhibitions of these flowers could not be held simultaneously; but shows, after all, are very small matters compared with the encouragement a combined association might give to the culture and improvement of all the winter flowers named. No doubt the Southampton Horticultural Society would feel aggrieved over the nomination of such a society, especially that its own is just now in a very precarious position, but it does next to nothing for the encouragement of the flowers mentioned, beyond holding a show of Chrysanthemums in the autumn. However, the chief value of the announcement comes from the evidence furnished of the interest which Carnations and Picotees have aroused in the southern districts. Clearly the National Society must look to the laurels if the Southern Counties Society be named. *A. D.*

with fruit, which proved to be exceedingly pleasant eating—much superior, indeed, to fruit of Wilson, Junior, sent for comparison. *A. D.* [We have also received specimen of fruits and a letter from Messrs. Wm. Fell & Co., Hexham. *Ed.*]

CURE FOR POTATO-SCAB.—From many experiments which have been made during the present season at different experimental stations in the United States, on the question of the prevention of Potato-scab, which so seriously interferes with the saleable condition of the tubers, it appears that a real preventive has now been discovered, provided the land upon which the Potatoes are set has not previously been contaminated with the disease; and even when that is the case, the disease has been considerably lessened. The following is the formula to be followed:—Make a solution of corrosive sublimate (which can be obtained at the chemists), one part to

wish to draw attention. The brick-covering is not intended as a fertilising agent; it is merely placed on the border to prevent it being trodden upon, to maintain on the surface an equable moisture, and to encourage the roots to come to the surface. This is the result of the brick-covering here; but the bricks here do not show green moss, such as described by Mr. Markham. This, together with the sodden state of the border underneath, betrays, I am afraid, a too free use of water at times when it was not wanted. Briefly, my practice is something like this:—After washing the house, pruning the Vines, and dressing them with some insecticide, we then remove the bricks out of our way; take away any loose exhausted earth we find on the surface; examine whether the roots are on the surface and whether the border is wet or dry; if the latter, we open the border gently with a fork, taking care not to break any of the roots which we invariably find scattered all over the surface. This done we throw on a liberal sprinkling of Thompson's Vine Manure, washing it in with a free and liberal application of water. This operation is followed by a top-dressing of healthy yellow loam, also freely mixed with more of Thompson's. The bricks are then placed on, and the house may now be pronounced ready for another year's Grape campaign. After all this treatment it will be seen that care must be taken not to pour water indiscriminately on to those bricks, or the soddening of the border mentioned by Mr. Markham will be the result, first satisfy yourself that the roots are well at work and in a fit state to receive and assimilate moisture. I cannot cut and send a whole house of Grapes up to the Drill Hall, but if the Royal Horticultural Society should think it worth their while to send some one here to see those Grapes and report thereon, I shall be very pleased to see them. The above Vines have been planted thirty-five years. *W. Miller.*

THE WINE-BERRY.—I herewith send you a few specimens of fruit of *Rubus phenicolasius*, the Japanese Wine-berry, introduced a few years ago, and acknowledged to be one of the most valuable of its kind. It is very vigorous in growth, attaining a height of 5 or 6 feet, and perfectly hardy. Its leaves are a dark green outside and silvery underneath. The young shoots are covered with a reddish-brown hair or moss, which makes it look, perhaps, odd, but handsome. The fruit is borne in large clusters, often 60 and 100 berries on one bunch, and the flavour of the fruit is different from any other berry, being sprightly, sweet, and juicy, with a delicate luscious flavour, peculiar to itself, and superior to others of the same family. For cooking purposes, nothing can be compared to it, as it still retains its fresh flavour. The fruit commences to ripen early in July, and continues for a very long time, and it also makes delicious jelly. The specimens sent are from the well-kept gardens of Lady Howard de Walden, De Walden Lodge, Eastbourne, and are grown on the chalk for the last three years, thanks to Mr. Simmonds, the gardener, who prides himself in all her ladyship's botanical pets, which are very numerous. *J. D.* [The plant was figured in the *Gardeners' Chronicle*, 1886, vol. xxvii., p. 365, and has frequently been exhibited at the Royal Horticultural Society. Ed.]

ROSA WICHURIANA.—This seems quite at home rambling on the face of rockwork at De Walden Lodge, Eastbourne. It resembles the Macartney forms, with small glossy foliage and long trailing growths, flowers pure white, and yellow stamens—a lovely hardy and beautiful Rose for rockwork, &c. *J. D.*

THE HORSE-CHESTNUT AND ITS ALLIES.

ÆSCULUS (INCLUDING PAVIA).—Among the larger trees of cool temperate regions there are few of the size of the Horse-Chestnuts that equal them in their combined beauty of flower and leaf. In our own country, certainly, there is none among what may be termed flowering trees possessing the stature and bulk of the common Horse-Chestnut, along with such a stately beauty when fully in bloom. Of the eight or nine species in cultivation it is by far the largest; the others (under the conditions that obtain in this climate) never get beyond the dimensions of small trees or shrubs. The two sections of the genus—*Æsculus* and *Pavia*—were at one time kept up as separate genera on the strength of the five-petalled corolla and spiny, thick-valved fruit of the *Æsculus*; and the four petals and smooth fruit with thin

valves of the *Pavia*. But in both the American *Æ. glabra*, and the Asiatic *Æ. turbinata*, these distinctions break down, each species possessing some of the characters that pertain to both sections.

The following list includes all the species in cultivation:—

EUROPEAN.

Æ. Hippocastanum.

ASIATIC.

Æ. chinensis (identity doubtful).

Æ. indica.

Æ. turbinata.

NORTH AMERICAN.

Æ. californica (Pavia).

Æ. flava (Pavia).

Æ. glabra.

Æ. parviflora (Pavia *macrostachya*).

Æ. Pavia (syn. *Pavia rubra*).

OF HYBRID ORIGIN.

Æ. carnea (*Æ. rubicunda*).

Many garden forms.

Æ. carnea is almost certainly of hybrid origin, but its history is unknown. There is also quite a crowd of forms, hybrid or selected, belonging to the very variable *Æ. flava* and *Æ. Pavia*, many of them being intercrosses between those species. In this class are to be included the trees (none of them real species) known in gardens and nurseries under one or other of the following names: bicolor, hybrida, lucida, lutea, Lyoni, macrocarpa, neglecta, pallida, Whitleyi, &c. Some of them are amongst the most ornamental and richly-coloured of the smaller sorts—superior, indeed, to the species from which they have been derived; but the differences between a goodly proportion of them are so slight, and there are so many whose characters have never been properly defined, that it would be a long and difficult task to unravel them at this date. In the following notes the leading types only are considered.

All the *Æsculus* like a rich, moist, loamy soil. With the exception of *Æ. californica* and *Æ. indica*, which should always be given the most sheltered positions available, they are quite hardy. Propagation by means of seeds is, of course, the most desirable as a means to vigour and long life. The seeds of the Horse-Chestnut should be sown as soon as they fall; when put away under the conditions suited to the majority of stored seeds, they rapidly lose their vitality. Budding and grafting, but chiefly the former, have to be resorted to in the case of named varieties and hybrids. *Æ. carnea* (*rubicunda*) thrives perfectly on the Horse Chestnut, as do also the latter's own varieties, but it is not a suitable stock for the less robust and smaller-growing species and varieties of the *Pavia* section. They should be worked on stocks of their own group. It may be mentioned that the buds to select are not the ones on the leafy portion of the young shoot, where, of course, the thick, swollen base of the petiole is in the way, but the small crowded buds at the base of the shoot, and nearest the old wood, which in ordinary circumstances are dormant.

Æ. CALIFORNICA.

A rare species in cultivation here, and only likely to be hardy in the southern counties, where however it thrives well and flowers. Like several of the *Æsculus*, it varies greatly in stature and bulk in a wild state. Sargent (who figures it in his *Sylva*, tt. 71, 72) says it is oftenest a shrub 10 feet to 15 feet high, with spreading branches; but sometimes a widely-branched tree, 30 feet to 40 feet high. The leaflets are usually five in number on each leaf, but vary from four to seven; they are borne on short stalks, the smaller ones almost sessile, faintly toothed, and there is a slight pubescence beneath when they are young. The raceme is erect, and although not so large as some, is one of the most ornamental in the genus. It is 6 inches or more long, with the white or pale rose flowers closely set, and numerous. The fruit is slightly pear-shaped, and 2 to 3 inches

long, carrying as a rule one seed. In California it flowers in May, but not till a month later in this country. It was first introduced by Messrs Veitch, and they were also the first to flower at Exeter in July, 1858. It is a native of the Upper Sacramento river, California, and on the western slope of the Sierra Nevada Mountains. For tree-lovers favoured districts it is a tree worthy of notice; only because of the beauty of its flowers, but also for the length of time over which the flower season extends.

Æ. CARNEA (THE SCARLET HORSE-CHESTNUT).

Of the Horse-Chestnuts with coloured flowers, it is certainly the most ornamental. It is far from being as large a tree as *Æ. Hippocastanum*, and rarely exceeds 30 feet in height. Of its origin nothing definite is known, but it is believed to be a hybrid possibly between the common Horse-Chestnut and *Æ. Pavia*. It is at once distinguishable from the former of these by its leaves; they are of a deep green, the leaflets have a more uneven surface, and are also more or less curved and twisted. The flowers are borne in racemes 8 to 10 inches long, the flowers being a rich rosy-scarlet. On first opening each petal is marked by an orange-yellow blotch at the base, which afterwards becomes a deep red. The red colouring matter, to which the flowers owe their beauty, also permeates other parts of the plant; the leaf-stalks are often of a rich rhubarb-red, as are also the mid-rib of the leaflets and the main and secondary flower stalks. There are several forms of this Horse Chestnut in cultivation, whose differences consist chiefly in a varying depth of colour. The finest of them all is var. *Briotii*, its flowers appearing in large racemes, and being of a richer red than any other.

Æ. FLAVA (SWEET BUCKEYE).

A tree about 30 feet high, as a rule, but, according to Sargent, met with in America sometimes as a shrub, or, on the other hand, as much as 90 feet height. Each leaf has from five to seven leaflets that taper towards both ends, but more abruptly towards the apex; they are pubescent beneath, especially on the midrib and veins, the pubescence being mostly whitish, but occasionally of a reddish-brown. The racemes are 4 or 5 inches high, and (in many cases) may be considered as the typical form; the flowers are pale yellow. But this is a most variable tree, and has apparently hybridised with other *Amelanchier* species. There is, in consequence, a large number of varieties in cultivation, many of which have been named. The sorts grown as *neglecta*, *hybrida*, *Lyoni*, *macrocarpa*, *pallida*, *discolor*, and others belong to this species, or are hybrids in which it predominates; but variations equal in importance to those that some of them show may sometimes be discovered in a batch of seedlings raised from a single tree. It is a native of the Eastern United States, is a superior tree to *Æ. glabra*, from which it is distinguished by its short stamens, which are hidden by the petals. *H. J. Bean.*

(To be continued.)

SCOTLAND.

A BATCH OF NEW STRAWBERRIES.

In these days some of our skilled horticultural experts seem to make new Strawberries as easily as they make new sovereigns at the mint, and it is they are produced for the same reason, namely, to make new sovereigns and Strawberries alike wear out. A sovereign in course of transference to many hands becomes a mere shadow of its former self; its destiny is the smelting-pot. Among Strawberries when vital force becomes weak, a cross, or new sort of fresh blood gives us a New Leader, a New Sovereign, a Monarch, a Prince, a Princess, a Lady, Veitch's Perfection, or What Not, and with new life and energy.

We are very far from saying that all the Strawberries are better than the old ones, the Strawberries that have held the field on either the Tweed—Garibaldi [This is Vicomtesse de

bury. Ed.] on the North and Paxton on the b, will need a very great deal of beating, and no seems to wish that either should be driven off field, so useful has each been in the past, is now, is likely to continue to be for many years to

as writer will not readily forget the look that ed over the face of a field-grower of Strawberries ie North a few days since, who complained so ly of the conduct of Garibaldi this year that the er, half in fun, half in earnest, advised him to them up and plant at once with Royal Sovereign. na, mon; na gif ye planted the Sovereigns for

Denmark, and Richard Gilbert are also fine prolific varieties, filling a large portion of the Strawberry season—the Princess of Wales promising to be a good second to Royal Sovereign, Garibaldi, or Earliest of All; and Richard Gilbert, in firmness of texture and quality, the coming substitute for the most useful Paxton. Veitch's Perfection, a cross between Waterloo and British Queen, has also gained a rapid reputation for quality and fruitfulness. The seedlings raised by Mr. Allan, of Gunton Park, Norwich, are also growing into favour with market men, and extending into private gardens. The opinion of several Strawberry experts has recently been given to the effect that

to combine the best qualities of both parents. I should rather define the flavour as a choice blend of British Queen, Frogmore Late Pine, with a dash of the old Hautbois.

Two promising Strawberries have been shown at the last meeting of the Scottish Horticultural Association in Edinburgh. One a fine large fruit, W. E. Gladstone, of which the stock is held by James Grieve & Sons of the Redbraes Nursery, Edinburgh; the other, Thomas Carlyle, a cross between Garibaldi and Dr. Hogg, in which the first parent has shown its prepotency in habit, earliness, and fertility, and a rich smack of Dr. Hogg is distinctly realized.

In case so many novelties should confuse some steady-going readers and growers, I would recommend Garibaldi, Royal Sovereign, La Grosse Sucrée for the main early crop; British Queen where it does well, Dr. Hogg, Gunton Park, Richard Gilbert, Sir J. Paxton, and President for main crop; and Lord Suffield, Prince of Wales, Waterloo, and Latest-of All for the latest. By growing some of the latter on borders on the north side of walls, another month may be added to the length of the Strawberry season. When in Perth the other day I was not surprised to find growers still swearing by the Elton Pine as their best and latest Strawberry. D. T. F.

TREES AND SHRUBS.

ITEA VIRGINICA.

WHEN properly treated, this North American shrub is very ornamental, yet it appears in late years to have fallen into neglect. It is the more valuable because it flowers during July and August, when hardy shrubs in bloom become scarce. It grows naturally in wet situations in several of the Eastern United States, and an abundance of moisture, together with a rich loamy soil and a sunny position, are its chief requirements under cultivation. It grows into a rounded bush 3 or 4 feet high (perhaps more ultimately), and has lanceolate, dark green leaves about 3 inches long, pointed and minutely toothed. The flowers are very numerous, and closely set on an erect, simple, and cylindrical raceme, which measures about 4 inches in length. The flowers are rather dull white, scarcely half-an-inch across, with five linear pointed petals. When the plant is seen at its best, these racemes are borne abundantly, and it is then as ornamental as *Clethra alnifolia*, which it resembles. But that shrub, of course, belongs to the Heath family, whilst the *Itea* is one of the shrubby Saxifragaceæ. It is an old garden plant, and is said to have been cultivated by Archibald, Duke of Argyll, in 1744. W. J. B.

SWEDEN.

STOCKHOLM.—The second horticultural show in connection with the General Art and Industrial Exhibition in Stockholm, was held on July 30 to August 2. The show was well attended. Large decorative plants and fruits and vegetables were well represented. There were also good collections of hardy annual and perennial flowers, and decorative arrangements of flowers.

The Swedish Horticultural Society of Stockholm had invited horticulturists from the whole of the country to a conference. On Saturday, July 31, delegates from the different societies met, and on Sunday, August 1, the general meeting, which was attended by about 400 persons, took place in the House of Parliament (Riksdagshuset).

There were in all seven questions on the programme. The first and the chief one related to the formation of a fund for the purpose of relief to gardeners, nurserymen, and their families, when in need. The debate was opened by Herr Knut Bovin, who spoke about the necessity of a better organisation of gardeners and nurserymen in the interest of the whole trade, as well as of the individual members, and pointed out how in other countries great results



WILLIAM MILLER.

(Gardener at Combe Abbey for the past thirty-six years, and Senior Judge at the Shropshire Horticultural Society's Show.)

ing. Garibaldi is an old tried friend, that has ly done well by me, and I maun just stick til't, ve up Strawberry growing."

ch strong conservative feelings, though not often rongly expressed, largely prevail among fruit-ers. It proves also a useful antidote to the too substitution of new varieties for old. The er should always be tried tentatively, as few s are more influenced than Strawberries by soil climate. From the Laxton mint at Bedford, Sovereign and Latest-of-All may safely lanted in quantity. Early Laxton and ch are also promising sorts. Mr. Carmi- s four, Prince and Princess of Wales, Queen of

Lord Suffield and Gunton Park Strawberries not only match but excel in flavour British Queen and Dr. Hogg. Such testimony might have caused raisers to pause in their work. It seems, however, to have only roused Mr. Allan to new efforts among his favourite fruits. Hence, at the show at Norwich he showed Lady Suffield, a cross between Lord Suffield and Empress of India.

I have also had the pleasure of tasting and carefully comparing and contrasting Lady Suffield with other fine standard varieties, old and new. I have no hesitation in stating that for unique flavour and delicious aroma this promising Strawberry probably excels all which have preceded it. It has been said

were achieved in this direction. He read out some extracts from the rules of the English Gardeners' Orphan Fund and the Gardeners' Royal Benevolent Institution, and recommended that a similar organisation should be established in Sweden. The matter was referred to the Swedish Horticultural Society in Stockholm, which has to appoint a committee to work out a plan of organisation to be laid before the societies in the different parts of the country.

The second question—the formation of a National Horticultural Society—was considered nearly allied with the first one, and was referred to the same body to be dealt with.

The next conference is to be held, in connection with a horticultural exhibition at Malmo, in the year 1900.

From September 23 to 30 this year an autumn and fruit-show is to be held here in Stockholm. *M-g.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

AUGUST 10.—*Present:* Dr. M. T. Masters (in the chair); Rev. W. Wilks, Dr. Bonavia, and Rev. G. Henslow, Hon. S. C.

Vine-leaves Defective.—Some Vine-leaves, which appeared to have decayed prematurely were exhibited. No fungus was present, and their defective appearance was attributable to too high cultivation, guano being freely used, with great heat, and too much water, such being quite consistent with their appearance.

Ribes aureum in Fruit.—Dr. Masters exhibited a branch, bearing a raceme of ripe purple-black berries, of this common shrub. Though introduced by Mr. Douglas from California, the fruit has rarely if ever been seen before. It was received from Mr. Veitch.

Chrysanthemum-leaves Attacked by Grubs.—These were received from Mr. Jenkins, and were forwarded to Mr. McLachlan, who reports "that the grubs are very young larvae of the 'Silver Y-moth' (*Plusia gamma*). It will attack almost anything. They should be destroyed by hand-picking." The caterpillars are doing considerable damage to the Chrysanthemums.

Green-flowered Cross-leaved Heath.—Dr. Masters showed specimens of this unusual condition. It resembles the "Wheat-eared" Carnations sent to the last meeting, and consists of an abnormal repetition of ciliated bracts; the flower in the centre having been arrested in consequence of an attack by some grub.

Pelargoniums Decaying.—Examples of the varieties *Vesuvius* and *West Brighton* were shown, which had decayed from the collar upwards. It was attributed to too deep planting. They had large roots, and had been apparently quite healthy when planted, some being over two-year-old plants. Possibly they were attacked by a slime-fungus.

HASTINGS AND ST. LEONARD'S HORTICULTURAL.

AUGUST 11.—There are few prettier places on the south coast for an exhibition of flowers than the Alexandra Park, Hastings, and the above show was one of the best held by the Society. The exhibits were good throughout, but especially so the plants, groups, fruit, and table decorations.

Mr. T. Portnell, gr. to Sir A. Lamb, Bart., Battle, was very successful with plants, winning 1st prizes in all classes open to him. Mr. A. Gadd, gr. to P. A. Eagles, Esq., followed in the majority of cases. Particularly noticeable were *Ixora javanica* and *I. Fraseri*, *Statice Gilberti*, *Rondeletia speciosa major*, *Phormium variegatum Veitchi*, *Phoenix dactylifera*, and *Areca Baueri*, among Mr. Portnell's many plants. Mr. F. Morris, gr. to C. J. Eden, Esq., Hastings, was also very successful here. Mr. Portnell again led for stove and greenhouse flowers.

Mr. J. Stredwick, Silverhill, Hastings, won for twelve Cacti, for twelve bunches of Pompones, and for twelve show or fancy Dahlias, his examples of *Matchless*, *Cyril*, and *Delfini* being very good.

Mr. T. Durrant Young, Eastbourne, was 1st for twenty-four cut Roses, closely followed by R. E. West, Esq., Reigate. Table decorations were especially good, Mr. Notcutt, St. Leonard's, winning for three stands (open), and Miss Smith, St. Leonard's, for three stands (ladies only).

Fruit, especially Melons and Grapes, were good. Eight competed in a class for three bunches of Black Hamburgh Grapes, Mr. Camm, gr. to the Duchess of Cleveland, Battle, just beating Mr. J. Gore, Polegate, who was 1st for three of any other black with *Gros Maroc*, and for three of Buckland Sweetwater. A collection of eight dishes found Mr. Gore well ahead.

Vegetables were much in advance of expectation for so dry a season, and upon the warm, shallow soils of the neighbourhood. *A. P.*

BISHOP'S STORTFORD FLOWER SHOW.

AUGUST 11.—The annual show of the Bishop's Stortford Horticultural Society took place on the above date, at the Grange, Bishop's Stortford, by permission of Mr. J. Barker, J.P. The exhibits numbered over 1200, and were fully up to the usual high average quality.

Among the nurserymen who exhibited were Messrs. T. Rivers & Son, of Sawbridgeworth, who had a choice collection of pot fruit; Messrs. Wm. Paul & Son, of Waltham Cross, and Messrs. G. Paul & Son, of the Old Nurseries, Cheshunt, both of whom showed collections of hardy herbaceous plants and cut Roses; Messrs. R. Wallace & Co., of Colchester, who had an attractive display of bulbous plants; Mr. W. Rumsey, of Waltham Cross, a fine lot of cut Roses; and Messrs. A. E. McMuller & Co., of Hertford, a stand of Sweet Peas.

In the competitive classes, there were some choice exhibits. For a group of plants, Mr. J. Richardson, gr. to Sir James Blyth, Bart., of Blythwood, Stansted, took 1st prize; Mr. T. Lodge, gr. to Mrs. Menet, Hockerill, 2nd.

In the classes for Begonias, which are always a strong feature of this show, Mr. D. Patmore, gr. to Mr. Charles Gold, jun., was 1st.

In the Fruit classes, the white Muscat Grapes which took 1st prize were an exceptionally fine exhibit, as were also the collections of fruit for which prizes were taken by Mr. B. Calvert, gr. to Col. Houlton; Mr. E. Atkins, gr. to Miss Pulteney; and Mr. Beech, gr. to Mr. Jno. Barker. The Grapes referred to were grown by E. Shelton, gr. to Mr. J. Barker, J.P.

The cottagers' classes were also well filled, and the quality of the produce was, considering the season, highly satisfactory. There were upwards of thirty table decorations in the ladies department, and also a number of very attractive decorations of other kinds. A show of agricultural produce was also held.

CARDIFF HORTICULTURAL.

AUGUST 11, 12.—The ninth annual show was held in the Sophia Gardens, Cardiff. The tents were pleasantly interspersed on the lawns amongst the shady trees and shrubberies, which gave an air of agreeable informality to the exhibition.

The groups of plants and the table decorations were decidedly the best features of the show, and proved extremely attractive; while fruit and vegetables, on the contrary, were fewer in quantity, and of moderate quality.

Among cut flowers, Roses were splendid for the season, as were also Dahlias, but the competition was not extensive. Bouquets, wreaths, crosses and sprays, were remarkably fine.

In the open class, a prize of £10, and a Silver Cup valued at 2 guineas, for the best group of miscellaneous plants, arranged for effect, on a space of 100 square feet, was won by Mr. McLew, gr. to John Gunn, Llandaff, with an admirably-arranged group of graceful plants, which for beauty of effect was charming. Conspicuous in the formation of this group were some lovely specimens of Bamboos; Messrs. Case Bros., Cardiff, and Mr. R. Crossling, Penarth, took 2nd and 3rd prizes respectively, both being good; but in attempting to break away from the conventional circle style, by making use of cork bridges, slightly overdid it, the idea hardly being suitable to the limited space of 100 feet square.

In the amateur class, Mr. McLew was again successful with a charming group occupying 50 square feet; Mr. W. Carpenter, gr. to W. J. Buckley, Esq., Llandely, was 2nd.

For the group occupying 25 square feet, Mr. Rex, gr. to -- Waldron, Esq., Llandaff, was 1st.

For the best six stove or greenhouse plants in bloom, Mr. Lockyer, gr. to J. C. Hambury, Esq., Pontypool Park, won 1st prize, with well-flowered plants of good species. Mr. Lockyer also took the 1st prize for the best single specimen plant in bloom.

In the open class for six Fuchsias, Mr. Hillard, an amateur, won the 1st prize; and also secured a Certificate of Merit for the best-grown Fuchsia in the show.

Mr. L. Clarke, gr. to Col. Sir Edward Hill, Llandaff, took 1st prize for twelve plants for table decoration.

Mr. McLew carried off the 1st prize for the best six stove or greenhouse Ferns, with splendid specimens of *Davallia Mooreana*, *Adiantum plumosum*, *Microlepia hirta cristata*, *Cibotium Barometz*, *Asplenium nidus*, and *Gymnogramma schizophylla*.

A very handsome and well-grown collection of Cacti in pots was exhibited by Mr. Ralph Crossling, Penarth, which was deservedly awarded a Certificate of Merit by the committee. Amongst them, *Reine Charlotte*, *Italia*, and *Austria* were noticeable, while John Crossling, a seedling raised at Penarth, attracted attention.

In the cut-flower section, Mr. Ralph Crossling and Mr. Stephen Treseder, Cardiff, took all the chief prizes for Roses, the former also winning the Royal Horticultural Society's Silver Medal with his stand of H.P., twelve varieties, of three blooms each. The varieties in this stand were *Victor Verdier*, *Ulrich Brunner*, *Victor Hugo*, *Jean Souper*, *Mrs. John Laing*, *Foster Holmes*, *Horace Vernet*, *A. K. Williams*, *Heinrich Schultheis*, *Alfred Colomb*, *Duchess of Bedford*, and *Duke of Wellington*.

For twelve bunches of Cactus Dahlias, Messrs. Keynes, Williams & Co., Salisbury, were 1st; and Mr. William Treseder, Cardiff, a good 2nd; while John Basham, Basaleg, was awarded a special prize, and deservedly so, for

his collection. Messrs. Keynes, Williams & Co. had three new seedlings, *Acachon*, *Mary Service*, and *Br* which unquestionably gave their collection the prior

For twenty-four Dahlia blooms, Messrs. Keynes, W & Co., and Mr. W. Treseder, were 1st and 2nd respectively. In the open class for table decorations, Messrs. Case Cardiff, were 1st, and obtained the Royal Horticultural Society's Silver Medal for a very effective arrangement. Phelps, Cardiff, was 2nd.

Mr. A. E. Price, Cardiff, was 1st for the band with a beautiful arrangement of *Odontoglossum*, *Cal Paneratum*, and *Asparagus plumosus*.

FRUIT.—Mr. J. M. Franklin showed some fair Grapes, and — Phillips, Esq., of Hereford, some Peaches. Pine-apples were inferior. Melons were Mr. Basham, of Basaleg, showed some fine culinary.

VEGETABLES were shown well by Mr. Charles Foster Morgan S. Williams, Esq., Neath, who carried off principal prizes.

TRADE EXHIBITS.—Mr. William Treseder, Cardiff, very nice herbaceous flowers, and some fine Dahlia for which this firm has more than a local reputation. Birkenhead, of Sale, showed, as usual, a very fine collection of Ferns; and Messrs. Clibran, Altrincham, amongst exhibits, had some good *Viola* blooms.

MARLOW HORTICULTURAL.

AUGUST 11, 12.—This Society held its annual exhibit the above dates in the Cricket Ground. This is the exhibition of the Society, which continues to grow in importance, and the exhibits on this occasion were of good quality.

Messrs. J. Veitch & Sons, contributed 150 bun hardy herbaceous flowers and annuals, while Mr. C. T. Royal Nursery, Slough, also sent a not less merited collection of Roses, Carnations, Dahlias, and herb flowers.

Messrs. J. Laing & Sons sent a handsome group of native plants, and Mr. R. Owen, and Mr. Such, Malden, plants, cut flowers, and floral designs.

Groups arranged for effect in a semicircle were a feature, Mr. Blackmore, gr. to R. Hay Murray, Spinfield, Marlow, obtaining an easy 1st, with an arrangement composed almost entirely of highly coloured plants.

Fruits were shown in numerous classes, and were average quality. The competition in the classes for tions of vegetables was keen.

TAUNTON DEANE HORTICULTURAL.

AUGUST 12.—This was the thirtieth annual show society having been established in 1866; and there falling off whatever perceptible in the interest the awakens in the district. The Vivary Park, which has greatly improved since it became the property of the town, charmingly fresh and green, and the grouping of the tints admirable. The secretary, Mr. John S. Windsor, admirable manager, and the judges were able to perform duties with ease. Some falling off in the number of plants staged was apparent, but the series of w England shows make a great demand upon exhibit this season of the year. Cut flowers were numerous their quality generally very good; vegetables very fine table-decorations greater in quantity than is usual.

Specimen stove and greenhouse plants are always a feature of great interest at Taunton, £20 being offered as a prize for twelve; and Mr. J. Cypher of Cheltenham was usual with some very fine specimens, which took 1st prize in this class, and the one for six plants; Rowland, gr. to W. Brock, Esq., was 2nd.

In Division B, Mr. Rowland was 1st with twelve stove greenhouse plants.

The best six plants came from Mr. Thomas, gr. to Marshall, Esq., Taunton.

Groups of plants arranged for effect were shown in classes, and in both of them Mr. Rowland, who has an eye for a light and effective arrangement, took the 1st. Mr. Peel being 2nd. The latter had the best six stove plants, chief among them being two good specimens of *Marnockiana* and *Turnbulli*.

Orchids were shown in four in two classes. Mr. Th gr. to W. G. Marshall, Esq., Taunton, was 1st in both. Tuberos-rooted Begonias were well shown by Mr. T in two classes, and by the Rev. J. D. Price in an *Cockscomb*, *Gloxinas*, *Achimenes*, *Fuchsias*, *Ba Petunias*, and *Lilies* are still invited, but they vary in one year after another; so long as they are retained schedule so long will they be grown and exhibited specimen Fuchsias fall behind those seen at Trow and elsewhere. The best newly-introduced flowering was *Dipladenia boliviensis amabilis*, from Mr. Rowland best foliage plant, *Croton Flamingo*, a brilliant form Mr. J. Cypher.

The best specimen stove plant was a fine piece of *S notis floribunda*, from Mr. S. Bennett; and great plant, a capital example of *Dasylirocn acrotrichum*, fr W. A. Sandford.

Cut flowers are very popular at Taunton, and they

leading feature. The best thirty-six, and also the best twenty-four, came from Mr. J. MATROCK, Headington, Oxford; Messrs. J. TOWNSEND & SON, Worcester, were 2nd in both classes.

In the amateurs' division, Mr. THOMAS HOSEA, Lower Easton, Bristol, was 1st with twenty-four and twelve Roses, and twelve Teas; taking the 1st prizes in each with excellent blooms for the time of year.

For Dahlias, Mr. GEORGE HUMPHRIES was 1st, with twelve show, and also with twelve fancy varieties. Cactus and decorative varieties, single and pompons, Mr. G. HUMPHRIES staging pretty blooms of the latter. Phloxes were shown in collections of twelve spikes. Quilted and flat-petalled Astors, owing to the dry season, were below mark; the comet varieties came to the fore in the latter class. Gladioli were shown in twenty-fours and twelves; and Phlox Drummondii, which has quite displaced the Verbena, was shown in fine, fresh, attractive bunches.

Floral decorations included a table laid for eight persons with fruit and flowers, Mr. J. CYPHER taking the 1st prize, with a charming arrangement.

FRUIT was a good feature, though owing to the scarcity of some kinds, it was not shown so numerously as usual. The best eight dishes, which consisted of Black Hamburg and Muscat of Alexandria Grapes, Bellegarde Peaches, Pine Apples, Nectarines, Figs, Apples, Cherries and Melons, came from Mr. J. LLOYD, gr. to V. BRUCKEY, Esq., and Mr. CROSSMAN, gr. to J. BRUTON, Esq., Yeovil, was 2nd.

Mr. CROSSMAN had the best four dishes, setting up good Madrasdell Court Grapes, Dymond Peaches, Windsor Castle Nectarine and Melon; Mr. LLOYD took the second prize.

The classes for Grapes and Peaches were satisfactory. Pines were not so numerous as usual. The best dessert Pears were Williams' Bon Chrétien and Jargonelle, the former evidently from an Orchard House; the best dessert Apples, Red Astrachan, Irish Peach, and Beauty of Bath; the best culinary, Lord Suffield, Peasegood's Nonsuch, and Warner's King. Apricots, Red and White Currants, with Cherries, were also shown.

VEGETABLES.—There was a large display of vegetables. The special prizes offered by Messrs. BUTTON & SONS, E. WERN & SONS, and JARMAN & CO., brought fine collections; and those who were found declaiming against undue size, would find much to criticize among those vegetables, and especially the Potatoes, shown at Taunton; but the Potatoes were handsome, clean, and bright, and generally even in size. Judges have shown their preferences for size in Potatoes, and exhibitors follow their lead.

Numerous Exhibits included a magnificent collection of sixty-six spikes of Gladioli, from Messrs. KELWAY & SON, Langport. Mr. B. VERRON & SON, Nurserymen, Exeter, had a large and varied collection of plants and cut flowers, occupying a considerable space. Messrs. FOOT & SON, Nurserymen, Sherborne, had cut examples of Cannas, Dahlias, Violas, &c. Messrs. W. TURNER & SON, Florists, Taunton, cut Dahlias, Carnations, Sweet Peas, &c.; and Messrs. JARMAN & CO. a large exhibit of Dahlias, Sweet Peas, hardy flowers, Roses, &c.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

AUGUST 12.—Committee present: Wm. Thomson, Esq., Walton Grange, in the chair; and Messrs. G. S. Ball, W. A. Gent, Dr. Alexander Hodgkinson, A. Warburton, H. Greenwood, P. Weathers, R. Johnson, and Jas. Anderson.

There were no groups presented on this occasion, but there were fifty-seven different plants submitted from various owners. Amongst these were four that obtained First-class Certificates, and twelve Awards of Merit.

HENRY STEEL, Esq., Tipton Court, Sheffield (Ed. Howarth, fr.) presented *Odontoglossum crispum* var. *Henry Steel*. This plant bore a spike with a dozen flowers of large size and good substance, with pale lilac blotches, and having a lip of large size similarly adorned (Award of Merit).

Mr. JAMES ANDERSON, Wallace Avenue, submitted a very high-coloured *Cattleya Warneri* magnifica (Award of Merit); the segments were uncoloured of pretty rosy-crimson, the lip deeper in colour. The same exhibitor had a fine variety of one of Jensen's imported *Odontoglossum crispum*, the lip being large, and finely blotched and spotted, which the committee asked to see again. The spike had seven flowers on it. *Cattleya superba splendens*, and several varieties of *Cattleya Harrisoni*, were also shown.

WALTER CLARKE, Esq., Wrexham (Mr. Thomas Jones, gr.), had *Cypripedium Youngianum*, in which is blended the *pumila*, *latigatum* and *Veltheili*; also the beautiful *Cypripedium Harrisoni* = *Harrisoni* × *Santerianum* (A. M.); this is an exceedingly showy and effective cross; also *Cyp. Alice* = *C. Spicerianum* × *Stonoi*.

Messrs. CHARLESWORTH & CO., Bradford, had several very good things; the only plant getting an Award of Merit being *Cattleya Eldorado Wallisi*, with albino segments, and having a bright orange blotch at the base of the orifice of the lip; *Cypripedium* × *apiculatum* and *C. x Hypatia*. Other good exhibits were *Leilio-Cattleya elegans*, called *Stelzneriana*, *Odontoglossum Pescatorei*, and the fine hybrid *Leilio-Cattleya velutina*.

SAMUEL GRATRIX, Esq., Whalley Grange (Mr. D. McLeod, gr.) had a good fresh plant of *Cypripedium* × *Gratrixianum* = *Ensladenae* × *bellatulum*. The flower was not fully developed, but it is a distinct *bellatulum* cross, and it is better than most of that progeny in having an elongated peduncle (Award of Merit).

Captain SCHOFIELD (Mr. Schill, gr.), had a beautiful form of *Leilio-Cattleya elegans* (Award of Merit) with an extra brilliant lip, but the sepaline segments comparatively narrow.

H. H. BOLTON, Esq., Newchurch (Mr. Eastwood, gr.), put up a fine variety of *Leilio-Cattleya crispata* (Award of Merit), which, when shown grown, may get the premier award; the lip is large and of fine quality.

THOMAS STATTEN, Esq. (gr., Mr. K. Johnson), had the effective and finely-finished *Cattleya Brymeriana*, in which the blood of *superba* and *Eldorado* was finely commingled (Award of Merit); also, the old and seldom seen in flower *Cattleya Dowiana*, fine, flat, typical flower (Award of Merit); *Cypripedium Charles Canham*, large, but rather dark in colour; *Lelia elegans Bluntii*, not a large flower, but having a lip of surprising brilliancy (Award of Merit). His chief exhibit, for which he received a First-class Certificate in cut flowers was *Cattleya Gaskelliana alba*. This was a flower of fine size, but not an albino, having the limbs slightly flushed; indeed, the licence taken with the name of *alba* is too great. Orchidophiles wink at any amount in the lip-limb of shades of yellow, and permit a pass to *alba*, but to no other colour. That matter wants clearing up.

F. O. WHOLEY, Esq., Bury (Mr. Rogers, gr.), presented a very fine coloured but not fully developed *Cypripedium Lawrenceanum*. In first rate variety, this takes a prominent place, although an old species.

JOHN LEMMAN, Esq., West Bank (Mr. Edgo, gr.), had a specimen placed with several large flowers of *Stanhopaea tigrina* (Award of Merit). These flowers were fully as good as any we have seen. Among others submitted we may name a good dark *Leilio-Cattleya elegans*, *Cattleya Warscewiczii* and *Gaskelliana*.

Geo. SHORLAND BALL, Esq. (Mr. Alex. Hay, gr.), had a First-class Certificate for a grand variety of *Maadevallia Veitchiana grandiflora*. It was only a small plant having a few brilliant flowers on it, the gold and the crimson merging and contrasting well; it will fill well when larger. The same gentleman had also a fine form of *Cattleya Gaskelliana* in a smallish plant with the segments snow white without flaw, and the ground colour of the lip also white with the lemon blotch in the orifice of the lip, with faint stencillings of roseate-pink towards the extremity of the blade exactly as in *Cattleya labiata bella*, described by me in *Gardener's Chronicle* in 1896, and precisely similar to *Cattleya labiata* Messurel noticed by your London Orchid correspondent.

Dr. ALEXANDER HODGKINSON, The Grange, Wilmslow (Mr. Joseph Moore, gr.), had a First-class Certificate for *Lelia monophylla*, with more than two dozen flowers on it, which also received a Cultural Commendation. This was really the gem of the meeting. It is the only *Lelia* we have from Jamaica, and it has been grown comparatively cool. Crowds of connoisseurs were about it after the award. It is about intermediate in size between *Lelia clunabarina* and *Sophroneites grandiflora*, and the colour is even more brilliant, without a single shade of other colour. The lip juts out, depending from an oblong column shaft—interesting and most beautiful. A First-class Certificate was awarded to *Sobralia Hodgkinsoni* (Rolle). This is in the way of *S. Lucasiana*, of excellent form, and the whole of the segments having a pink glow. The lip is of good form, more sessile than most of its compeers, with the blade extremity of glowing cerise, with white median line, and stopping short at the centre, from which the lemon solid blotch springs, the column, which is white, being scarcely convex. The best other things were *Cattleya Rex* and *C. Eldorado splendens*. J. A.

NATIONAL CARNATION & PICOTEE. (Northern Division).

AUGUST 14.—This society held its annual exhibition in the Annexe of the Royal Botanic Gardens, Manchester. The quality of both Carnations and Picotees was good, and in some of the classes there was a brisk competition. Mr. T. LORD, Holebottom, Todmorden, taking the premier prize for the fifteenth year without a break.

For twelve Carnations, bizzaros and flakes, white grounds, all dissimilar, Mr. LORD was 1st. The following were the best blooms: George, Master Fred, Gordon Lewis, T. S. Hedley, Bruce Findlay, Magpie, Mr. Rowan, Houlgrave, Ed. Curzon, Mr. T. Lord, and Thiddeus. Mr. J. EDWARDS, Blackley, was 2nd.

For twelve Picotees, white grounds, all dissimilar, Mr. T. LORD was again 1st, and Mr. KENYON, Bury, was 2nd.

For six Carnations, bizzaros and flakes, white grounds, dissimilar, Mr. C. HEAD, Hebdon Bridge, was 1st, with George, Magpie, Edith Annie, Crista-galli, Master Fred, and Robert Houlgrave; Mr. C. F. THURSTON, Wolverhampton, was 2nd.

For twelve selfs only, not more than two flowers of one variety, Mr. T. LORD was again 1st, having the beautiful yellow *Germania*, B-a-uty, Mrs. Fred, Joe Willett, Topsy, &c. Mr. EDWARDS was 2nd; Emir and Fire King were best here.

For six selfs, not more than two flowers of one variety, Mr. C. F. THURSTON was 1st; King of Scarlets was grand, also Surprise. Mr. E. SHAW was 2nd.

Mr. C. HEAD took the prize for the best Picotee in the show; Mrs. H. Hambro was by far the best white, an exhibit very full and of good size.

For six fancy or yellow-ground Carnations and Picotees, Mr. SKEELE, Henley, was 1st; Monarch and Mr. Edwards were fine blooms; the 2nd and 3rd prizes went to Messrs. BROCKLEHURST, MOSTIN, and KENYON, Bury.

Mr. LORD had the best scarlet bizzaro in Admiral Curzon,

and also the best crimson bizzaro with Master Fred, also best pink and purple with Edith Anne, and the best scarlet flake with Sportman. Mr. JOE EDWARDS had the best rose flake with Mrs. Rowan. "Tender" from E. R. Brown was a fine flower. Mr. LORD was again largely to the fore on purple flakes with Gordon Lewis.

Picotees.—Mr. LORD was 1st with John Smith and Brunette in heavy-edged reds. In light-edged reds Mr. JOE EDWARDS with Thomas Wallace. In heavy edged purples and in the single bloom classes he held his own throughout. First class Certificates were awarded to Mr. LORD for a fine flaked bloom called Mr. T. Lord, and to Mr. BESWICK for a finely-formed Picotee still to name. J. A.

THE SHOW-HOUSE AT THE ROYAL BOTANIC GARDENS.

The span-roofed show-house was ablaze with varieties of *Campanula pyramidalis*. On the other side was a grand lot of *Lilium lancifolium* of the darkest red-spotted strain, with many hundreds of expanded flowers. These, with *Hydrangea paniculata*, made a glorious display. In addition, we may mention that showy hardy bulb rising above the surface of the pot, *Hamamthus magnificus*, which completely beggars for effect the older *H. pulchellus*; the lustre of the globular heads is quite coral-like, and the yellow anthers make a grand top ornament.

THE ROYAL SCOTTISH ARBORICULTURAL.

AUGUST 16.—A very interesting annual meeting of this Society was held on the above date, Monro Ferguson, Esq., M.P., the President, in the chair. The Secretary, Mr. Robert Galloway, read out a list of seventy-three new members, the best possible proof of the vigour and life of this useful Society.

The Chairman seemed in a hopeful tone, while regretting the little support received from the Government, which he assured the Society did not arise from lack of willingness to give money help on the part of the Government, but far more for want of public sympathy and support. Landlords, factors, foresters, timber merchants, and the public at large were all interested in the production of timber of the highest quality at the cheapest rate. Its slow growth under the most favourable conditions told seriously against its increased production. While the farmer reaped one or more crops a year from his land, the planter may have to wait several generations for his profit. Forestry was far more dependent on landlords for capital than was agriculture, yet it was the last that had been first in their favour. The proprietors of Scotland, who had done so much to stimulate scientific agriculture in practice, had done practically nothing for commercial forestry. They had mostly confined themselves to forming the most beautiful pleasure-grounds in the world. This, however, was rather landscape-gardening than forestry. Factors and foresters, too, for lack of proper schools of forestry, had too often to buy their knowledge at the expense of owners. There are also other difficulties and discouragements to prevent owners going in for large outlays on woods. He was therefore driven to the conclusion that any considerable extension of timber-growing must be undertaken and partly managed by the Government. Still, if he could under present conditions counsel them to plant more, it was to all their interest to plant well and sell better if possible. Forestry to succeed under private management must have its records and its working plans kept carefully as title deeds, and posted up like ledgers. We believe that with the establishment of State forests, there would be prompt improvement in the Timber management of private estates.

But the time had not yet come for State forests in Britain, and indeed there were differences of opinion among arboriculturalists on the subject. But they were unanimous as to the need of a school or schools of forestry and experimental areas, and he believed that much of the future success of forestry lay in these directions, and this Society seemed the only available instrument able and willing to promote these desirable objects. He called upon them not to relax their efforts until they had made suitable provision for the training of foresters, so that they might remove the waste and ignorance besetting an industry which ought to rank, in Scotland at least, in honour and usefulness abreast of agriculture.

Professor SOMERVILLE, in moving a hearty vote of thanks to the Chairman, condemned the Government for ignoring forestry, and doing nothing to foster it in the Highlands. Professor Somerville then gave an able summary of the prize and other essays, with the somewhat stringent criticisms of the judges, which ought to prove instructive to the writers.

On the motion of Mr. M. DUNN, Dalkeith, the judges were thanked for their report, which was remitted to a committee.

FORESTRY IN THE VICTORIAN ERA.

Mr. M. DUNN, Dalkeith, afterwards delivered an address on "Forestry in Scotland during the Sixty Years of the Queen's Reign." During the last sixty years, he said, substantial advance had been made, not only in the introduction of new species of trees and shrubs, and improved methods of management, but in the keen interest displayed by the public in the question of forestry education, with a view to the more profitable development of forests. Forestry had made greater progress in the last sixty years than agriculture or horticulture, much as they had accomplished. Forestry, as now understood, was not known at the beginning

of the Queen's reign, and was almost entirely the creation of the Victorian era. Pursuing the subject, Mr. Dunn noted the improvements in tools, implements, means of transport, &c., which had taken place during the Queen's reign, and while pointing to famous planters prior to the Queen's accession, devoted particular attention to the noted men (largely Scotsmen), such as Douglas, Drummond, McGregor, Fortune, J. C. Loudon, &c., who greatly advanced the cause of forestry in Britain by the introduction of trees and shrubs from foreign countries. Among other branches of the subject to which Mr. Dunn directed attention were forestry literature, and forestry education, and the great importance which these had assumed in later years.

The meeting, on the motion of the Chairman, cordially approved of the recommendation of the Council, that members of the Society should use their influence with Town and County Councils and other local authorities, as well as landed proprietors generally, to induce them to plant specimens of ornamental trees, avenues, groups, and woods of all sizes during the ensuing season, to commemorate in an appropriate manner the Queen's Diamond Jubilee Year. In submitting the motion, the Chairman said that the planting of such trees as was desiderated would not only embellish the spots where they were planted, but there might be some hope of teaching the rising generation to take care of young trees. His own experience was that where it took sixpence to plant a standard tree, it took six shillings to protect it. To render it more certain that some planting worthy of the occasion should be done in Edinburgh before the end of the year, Mr. D. T. Fish suggested that some prominent street or streets should be planted, such as Princes Street, from the Calton Hill to the Caledonia Station, Hanover Street, from Princes Street to Golden Acre or Granton, or other suitable streets; and that a special committee of ladies and gentlemen be appointed by this meeting to co-operate or advise with the Town Council in carrying out these objects. On the advice of the President the matter was left in the hands of the Council of the Royal Arboricultural Society.

The proceedings closed with the award of thanks to the Chairman.

Later in the afternoon the members left for Dublin on their annual excursion.

SHROPSHIRE HORTICULTURAL.

(AUGUST 18, 1897.)

THAT a great success would result became a foregone conclusion when once it had become known that the Royal Horticultural Society would join hands with the Shropshire Horticultural Society to hold an exhibition of horticulture in 1897 that should be worthy of the present Victorian Jubilee year. Much of the history of the Shropshire Society has been previously given in these pages. It has been characterised by continued and, in the case of provincial societies, unparalleled success. The income has increased year by year, and its disbursements, besides being large, have been made in support of objects that have commanded general approval. The very last one was a sum of over £1000 to erect the Darwin statue, figured by us in our last issue. There was a mishap on Tuesday in regard to two of the tents; but the energy and resource of the executive did much to lessen the ill-effect that might have been feared. The extent of this show may be imagined from the fact that it required nearly 48,000 square feet of covered area. The deputation from the Royal Horticultural Society included the President, Sir Trevor Lawrence, Bart., and Messrs. H. J. Veitch, T. Statler, S. Courtauld, P. Crowley, J. Douglas, H. Selve Leonard, W. Crump, J. Smith, and the Rev. W. Wilks. The staff of judges employed by the Shropshire Society numbered twenty-six. The entries in the open classes were more numerous than usual, and the quality of the produce throughout was capital. Vegetables and fruit deserve the most unreserved praise. The more important exhibits in all of the open sections are referred to in the subjoined report, but the exigencies of time and circumstance prevent it from being exhaustive, even were such desirable. The weather was not wholly propitious.

Good as previous shows have always been, that held during the present week was undoubtedly the finest yet held. The executive, who are ably supported by the indefatigable Hon. Secs., Messrs. Adnitt and Naunton, did their best to secure such an exhibition as should beat previous records. The schedule was a most remarkable one, notable alike for the liberality of the prizes, and for the comprehensive nature of the classes.

In the plant classes the specimens have been seen in finer condition, but the reason for this has, in a great measure, been explained by the catastrophe of Tuesday last (see p. 127). The group classes suffered in a measure from the same cause; the space at command in the tent erected late on Tuesday, although extensive, did not afford sufficient room for the groups to be seen at their best, but for taste and quality they were first-class.

The cut flower classes throughout were exceedingly well represented, and the competition was invariably keen. About all of these exhibits there was a remarkably fine appearance.

Miscellaneous exhibits, chiefly by the trade, were great attractions, and added largely to the effect.

PLANTS.

STOVE AND GREENHOUSE.—In the large class for twenty plants, not fewer than twelve of which were to be in flower, Mr. J. CYPRER won the 1st prize somewhat easily, having grand examples of the following: *Bougainvillea Cypheri*, a splendid specimen, very rich in colour, with the bracts also of extra size (to this, as a new plant, was the Gold Medal awarded); *Erica Austiniana*, a little past its best, but a splendid plant; *Erica Eweriana*, also good; *Ixora Duffi*, with large trusses rich in colouring; *Ixora Williamsi*, which showed the effects of the crushing received under the first tent; *Statice profusa*, a large plant well coloured; *Allamanda Hendersoni* and *Clerodendron Balfourianum*, both fresh and good; and *Dipladenia Bracleyana*, very well-flowered. The foliage examples being *Kentia Forsteriana*, an immense plant with grand leafage; *K. australis*, also good, and a very large *Livistona chinensis* with superb foliage, also *Croton Johannis* richly coloured, *C. angustifolius*, a fountain of golden foliage, and C. Thompsoni, equally fine in colour with the preceding. One plant intended for this group, an immense specimen of *Cycas circinalis*, could not be staged in consequence of the injuries it had received.

Mr. FINCH, Coventry, who was 2nd, had smaller plants; he too had suffered seriously by the collapse of the large marquee. The best here were *Ixora Williamsi*, good and fresh; *Clerodendron Balfourianum*, good; *Erica Austiniana*, very fresh and clean. Of foliage plants, the best were *Kentia Forsteriana*, *Cycas circinalis*, and *Croton angustifolius*.

For six plants in flower, Mr. J. CYPRER was also 1st, staging a strong lot, viz., *Phenocoma prolifera* Barnesi, a perfect specimen; *Rondeletia speciosa* major, a finely-flowered plant; *Clerodendron Balfourianum*, very bright; also *Erica Aitoniana*, *Statice profusa*, and *Bougainvillea glabra*, all well flowered. Mr. FINCH was 2nd again, his best plants being *Ixora Fraseri*, extra good; *Erica retorta* major, a fine plant; *Stephanotis floribunda*, and *Allamanda Williamsi*, very freely flowered.

For six plants, open to the county of Salop only, Mr. LAMBERT, gr. to Lord HARLEIGH, Brogyntyn Park, Oswestry, was placed 1st, with a fine example of *Ixora Prince of Orange*, profuse in flower; *Dipladenia amabilis*, very healthy and well-bloomed; with a good *Allamanda grandiflora*, a *Croton Warreni*, and *Kentia australis*. Mr. BREMMELL, gr. to H. H. FRANCIS HAYHURST, Esq., Overley, Wellington, was a close 2nd here, his best being *Rhododendron Princess Royal*, a very fine plant, and well-flowered; also *Clerodendron Balfourianum*.

For a single specimen stove or greenhouse plant, Mr. LAMBERT was 1st, with *Dipladenia amabilis*, a fine specimen, the flower of high quality; the 2nd prize going to Mr. FARRANT for a large and good example of *Ixora Williamsi*; and the 3rd to Mr. JONES, gr. to G. BURR, Esq., Oaklands, with an excellent plant of *Bougainvillea glabra*.

FUCHSIAS.—The best six were staged by Mr. J. Carter, gr. to W. J. Scott, Esq., Besford House. These were what Fuchsias should be, in the best possible health, well-flowered, and in good variety: Wave of Life, charming, and Mrs. Rundle being conspicuous (a fine exhibit, and far in advance of any other).

GROUPS FOR EFFECT (FLOWERING AND FOLIAGE-PLANTS COMBINED).—For a group, occupying a space of 450 square feet, Mr. J. CYPRER, in spite of his misfortunes, won the 1st prize in a most creditable manner, the entire group displaying great originality in design, combined with tasteful and effective arrangement. Mr. Cypher has arranged many fine groups previously, but he never surpassed, or even equalled, that now under notice; the greatest charm consisted in the diversity evident throughout when viewed from various standpoints—light Palms, Aralias, and varieties of *Asparagus* with Bamboos, highly-coloured *Crotons*, many Orchids (notably *Dendrobium Phalaenopsis*, *Schroderianum*, and *Oncidium* in variety), formed the chief plants, the feature of the arrangement being a light ground-work, over which were arranged light arches of rustic cork, upon which the plants employed told with the best possible effect. Mr. MEE, Nottingham, was a creditable 2nd, with plants showing first-class culture. The entire group was very bright and effective, but it lacked the originality of design to be found in the 1st prize group; well-developed *Crotons*, highly-coloured, told with good effect; the back part was, however, rather too formal. Mr. FINCH, who was 3rd, had another good arrangement, the plants employed telling with good effect.

FOLIAGE GROUPS EXCLUSIVELY.—In this class, which is a fresh and notable introduction into the show, some excellent arrangements were to be seen. Mr. Roberts, gr. to C. H. WRIGHT, Esq., Halston Hall, Oswestry, was 1st. The qualification in this class being 250 square feet, foliage plants, Ferns, and Palms only being allowed, the group had depth, consequently there was room for employing plants of good size; the centre was a plant of *Kentia australis*, raised about 5 feet from the ground, and towering over the rest, standing very little from the centre of the arrangement; other light Palms were employed, whilst of smaller plants, dwarf *Crotons*, well coloured, and in single stems; foliage *Begonias*, too, were used, but there was a slight lack of such as *Caladium argyrites*, *Eulalia japonica* variegata, &c. Mr. J. CYPRER, who was an exceedingly close 2nd, staged a group more up-to-date in style, of irregular outline; the *Crotons* told most effectively, and the groundwork was very tasteful. Mr. McIntyre, gr. to Mrs. GURNEY PEASE, Woodside, Darlington, was placed 3rd; he too showing an admirable group, which would have looked better if it had been extended over a little more surface, with, in addition, a few more dwarf plants for groundwork.

Two more groups were shown in this class, show it is one which meets with encouragement from exhibitors.

COLEUS.—These are always shown well at Shropshire. On this occasion Mr. Carter, gr. to W. J. Scott, Besford House, took 1st prize with four large pyramidal trusses, and furnished, also highly coloured; Mr. Sutton Lane, being an exceedingly close 2nd.

ZONAL PELARGONIUMS (SINGLES).—Mr. A. MYERS here, with dwarf plants well flowered, and bearing good trusses. For doubles, the same exhibitor was showing plants equally well grown.

CALADIUMS.—The best half-dozen large plants of Mr. R. Lawley, gr. to Mr. R. DABY, Adlote; and best from Mr. Leith, gr. to J. R. GREATORREX, Esq., Hall. (Growers of these should take note of the new with brighter leafage.)

FERNS.—The best half dozen of these were staged by E. Jones, gr. to A. M. BARBER, Esq., Field House, W. the best being *Microlepia hirta cristata*, very neat *Adiantum Farleyense*, with A. Williamsi. Mr. STEVE to Mrs. J. M. SLANEY, Sunnycroft, Wellington, one of his finest being *Adiantum formosum*.

DRACENAS.—Mr. LAMBERT was 1st for six vases, with an 1 healthy, with foliage down to the pots, nearly broad-leaved forms. In the 2nd prize a lot from M. mell, D. Doucetti, was very good, and the rest well, but rather small.

BEGONIAS (TUBEROUS).—The first prize was awarded JONES, who had dwarf plants of double varieties; 1 gr. to R. TAYLOR, Esq., Abbey Forge, being 2 larger plants of singles.

GLOXINIAS.—The best dozen were staged by J. SMITH, Esq., Abbotsmead, he having bright and a varieties: Mr. Dawes, gr. to A. E. W. DABY, Esq., Ness, Shrewsbury, was 2nd, with plants equally 1 not so good in quality.

TABLE PLANTS.—Mr. MCINDOE was 1st in this class, admirable examples of what table plants should be, clean, and well furnished; Mr. McIntyre, gr. GURNEY PEASE, Woodside, Darlington, was a close 2nd of similar style and character.

MISCELLANEOUS COLLECTION OF THIRTY PLANT JONES took 1st in this class with dwarf, well-examples of *Vincas*, *Statice*, *Begonias*, &c.; Mr. being 2nd, with another good collection.

CUT FLOWERS.

DECORATIONS.—Following the order of the scheme will commence with the class for a display of floral ments. As usual, Messrs. PERKINS & SONS of 4 were 1st with a charming combination of arrangement, baskets, vases, arches, and bouquets. As *Croton* leaves, and other foliage and grasses were used effectively with *Roses*, *Carnations*, the *Orchids* used for decoration, and other flowers. The large central *Orchids* was especially good. The wild *Clematis* was good deal in this exhibit. 2nd, Messrs. JONES Shrewsbury. This was a good exhibit, though it is English of the former. A basket of *Anthuriums* was several small baskets of *Orchids* were pretty; 3rd, M. STEVENS, of Birmingham, whose exhibit was too.

For a ball-bouquet and bridal-bouquet Messrs. P. SONS were again 1st, their style and material being to that in the previous class; the colours were blended. 2nd, Messrs. JONES & SONS, with similar such good arrangements; 3rd, Messrs. POPE & SONS Norton, whose colours did not quite blend.

In a similar class, from which *Orchids* were used, Mr. J. R. CHARD, of Stoke Newington, was 1st; his bouquet was very light and pretty.

In the class for a bouquet of *Cactus D. hlias* only Messrs. POPE & SONS produced a charming exhibit, show can be done with a heavy flower like the *Dahlia*; this was Countess of Radnor, which was mixed with variegated foliage; this was much admired. 2nd, J. SEALE.

MESSRS. POPE & SONS were also 1st for bouquets Peas and *Roses*. The best stand came from Mr. J. R. 2nd, Mr. F. W. SEALE.

HARDY FLOWERS were illustrated in a strong contrast. The 1st prize was awarded to Mr. W. F. GUNN, Bir who whose exhibit was most meritorious and representative. *Herbaceous Phloxes* here were very good. Messrs. & SONS, Aberdeen, were 2nd. In this exhibit *Chimnum maximum* was very fine, also *Scabiosa caucasica*, *Echinops phaeocephalus*; 3rd, Mr. M. CAMPBELL Blantyre, who showed the pretty, but seldom seen *thalamum salicifolium*.

For a collection of bulbous and tuberous-rooted plants Messrs. HARRIS & SONS, Bedford, were a very good splendid *Gladioli*, good *Liliums*, *Mom-bretias* and *Liliums* a *platyphyllum*, *Hemvi* and *Leichboldi* mentioned. 2nd, Messrs. BARR & SONS; 3rd, M. WALLACE & SONS, Colchester, both with good exhibit latter contained *Lilium Maximoviczii*.

A class was provided for a large group of *C* arranged with their own foliage. Mr. M. CAMPBELL with splendid bunches, well staged. Some so-called staged, including Mrs. D. Dunlop and Snowball, gr. 2nd, Messrs. LIVING & MATHER, Kelso, who had varieties of border *Carnations*.

In the class for a collection of *Gladioli*, Messrs. J. & SONS were 1st. Their exhibit was magnificent,

varied. Thermidor, Grande Rouge, Enohantrees, and Dr. Bailey were selected as particularly good. The colours were brilliant. The 2nd prize was not awarded.

Messrs. D. & W. CHOLL, of Dundee, staged a large collection of Roses, and were placed 1st, button-hole and polyantha varieties were well represented; 2nd, Messrs. POPE & SONS.

Several large collections of Dahlias were exhibited. Mr. F. W. SHALL staged the most representative collection, and was 1st. His singles and Pompons were good. Some promising seedlings of these classes of Dahlias were to be seen. The arrangement would be more effective if foliage, other than that of the Dahlia, were allowed; Messrs. KEYNES, WILLIAMS & Co., were placed 2nd. Their collection was well arranged. It consisted chiefly of Cactus Dahlias of splendid quality. The following seedlings will be heard much of in September:—Britannia, Arachno, Mary Service and Keynes' White, the best white Cactus so far. Some good Show Dahlias were also staged; 3rd, Messrs. JONES & SONS of Shrewsbury.

Messrs. POPE & SONS had a good exhibit; but, unfortunately, used other foliage in the arrangement.

For twenty-four Dahlias, Mr. S. MORTIMER, Farnham, Surrey, was 1st; Mr. B. BRIAN, Longton, Staffs., 2nd.

For twelve bunches of Cactus Dahlias, Messrs. KEYNES, WILLIAMS & Co., were a very good 1st; Cyole, Sturfish, and Lady Penance were good, as well as several seedlings, of which Keynes' White calls for special commendation. 2nd, Mr. F. W. SHALL.

For eighteen varieties of Sweet Peas, T. ALDERSEY, Esq., Belle Vue, Shrewsbury, was a good 1st.

For forty-eight out Roses, Messrs. J. COCKER & SONS were 1st with good Horace Vernet, A. K. Williams, &c.; Messrs. D. & W. CHOLL 2nd; Messrs. HANKINS & SONS 3rd.

For twelve bunches of stove and greenhouse flowers the awards were:—1st, G. H. KENYON, Esq., Edgbaston; 2nd, Sir J. W. FRANK, Bart.; 3rd, Lord HARELICH, Brogyntyn.

FRUIT.

Fruit, as usual, was shown largely and well. THE VICTORIAN CLASS, intended to illustrate the fruit produce of British gardens, provided sixty-five dishes of fruit, arranged on side tables, in space 16 feet by 4½ feet, artistically displayed with cut flowers, foliage, and not more than twelve plants in pots not exceeding 5 inches in diameter. The fruit was to be selected from a list published in the Shropshire Horticultural Society's schedule, including representative kinds and varieties of both house and outdoor fruits. Three competitors entered in this class, and each made a creditable display. Mr. McINDOE, gr. to Sir JOSEPH PEASE, was a decided 1st, winning £30 and the Gold Medal of the Fruiters' Company, his produce including plants in the background immediately behind and above the sixteen splendid bunches of Grapes, eight black and eight white, cut flowers, and fruits. (Crotons, Palms, Arafias, and Eucharis amazonica, and trailing Moss, Orchid flowers, Caladium Argyrites, in pots, enclosed in scarlet bags, which together with the sp. eye of Fern, &c., contrasted effectively with the white cloth.

Grapes Alnwick Seedling, Gros Maroc, Gros Guillaume, and Black Hamburgh, faultless in size, shape of bunch, and colour of berry. Muscat of Alexandria, Buckland Sweetwater, Duke of Buccleuch, and Bowood Muscat, all very fine. Melons Darwin, Scarlet Model, and Magnum Bonum; two nice Queen Pines, Tomatoes, Peaches, Nectarines (Lord Napier); Apples, including two grand dishes of Gasconne scarlet; Pears Souvenir du Congrès, Brown Turkey Figs, Bananas, Cherries, Oranges, Plums, Gooseberries, Red and White Currants, Apricots, Plums in variety, and Filberts. This collection received 321 points, and in addition to the 1st prize already mentioned, was awarded a Silver-gilt Knightian Medal from the Royal Horticultural Society.

The fruits displayed were of the highest quality from the fruit grower's standpoint, and the arrangement was most artistic.

Mr. DAWES, gr. to Mrs. INGRAM, Temple Newson, Leeds, was 2nd (297 points). The bunches of Gros Guillaume, Madresfield Court, Black Hamburgh, Buckland Sweetwater, and Gros Maroc Grapes, were exceptionally fine in this class, as also was a fine cluster of Bananas.

Mr. GOODACRE, gr. to the Earl of HARRINGTON, Elvaston Castle, was a good 3rd, his back dishes, Grapes, Pines and Melons, being strong; the front and middle dishes rather weak. Mr. Goodacre's background of grasses and flowers was good.

Collection of Fruit, 9 dishes: 1st, Mr. BRENNELL, who had five Muscat of Alexandria and Black Hamburgh Grapes, Peaches, Nectarines, Figs, Apricots and Pears. Lord Trevor was 2nd, and Mr. LANGLEY was 3rd.

DECORATIVE DESK-TABLE.—Five very tastefully-arranged tables were put up—glass filled with Orchids and intermixed with light sprays of Ferns and Asparagus. Mr. GOODACRE was 1st for a light and effectively-arranged table, whereon was staged fruit of the best description, including a large Queen Pine, having large, well-developed, brightly-coloured pipe; long tapering bunches of Muscat of Alexandria, Black Hamburgh and Muscat Hamburgh Grapes; Peaches, Nectarines, Brown Turkey Figs, Pears, Transparent Plums, Countess Melon, and Moor Park Apricots (103½ points). The "Veitch Memorial" Medal was awarded to this capital exhibit. Mr. McINDOE was a good 2nd, being awarded 104½ points. Mr. HARRIS (Eastnor Castle Gardens, Ledbury), was a good 3rd (99½ points).

GRAPE made a grand display in themselves (334 bunches being staged), and were of a high order, being large in bunch and berry, and well finished. In the class for four bunches

of Black Grapes, two bunches of two varieties, twelve stamps were staged. Mr. DAVIS, gr. to Rev. T. ANDERSON, Welsh Frankton, Oswestry, was 1st, staging good bunches of Gros Maroc and Black Hamburgh, fine in every respect; Mr. Lambert, gr. to Lord HARELICH, Brogyntyn, Oswestry, being a very close 2nd, showing handsome well-finished bunches of Gros Maroc and Madresfield Court; Mr. Langley, gr. to Rev. T. M. BUCKLEY, Owen Tedamore Hall, West Felton, was a fair 3rd, showing heavy bunches of Madresfield and Black Hamburgh, requiring a little more colour to make them perfect.

In the class for four bunches of White Grapes, two bunches in two varieties, seven lots were staged. Mr. J. Campbell, gr. to C. E. NEWTON, Esq., Mickleover Manor, Derby, taking 1st prize with fine bunches of Muscat of Alexandria and Cannon Hall, the berries being large and beautifully coloured; Mr. LAMBERT securing 2nd place with Muscat of Alexandria and Buckland Sweetwater.

TWO-BUNCH CLASSES.—Thirteen pairs of Black Hamburgh were staged, Mr. BRENNELL, gr. to H. H. FRANKO HATHURST, Esq., Overley, Wellington, being a good 1st; Mr. HARRIS, gr. to Lady HENRY SOMERSET, Eastnor Castle, Ledbury, being a close 2nd.

Black Alicante.—Six stands were shown, Mr. DAVIS being a good 1st, staging heavy bunches, fine in berry and colour; Mr. GOODACRE, gr. to the Earl of HARRINGTON, Elvaston Castle, Derby, being 2nd.

Madresfield Court was represented by four exhibits, Mr. LANGLEY securing 1st position, showing good examples of this fine Grape.

GROS MAROC was represented by eight stands, the bunches being of good size and shape, and the berries large and well-coloured. Two medium sized bunches, consisting of extra large berries and beautifully coloured, secured 1st prize for Mr. GOODACRE, Mr. LAMBERT taking 2nd place, and Mr. F. JORDAN, Impney, Droitwich, 3rd.

Muscat of Alexandria.—Mr. NEILD, representing the "Cheshire County Council," Holmes Chapel, Cheshire, took 1st prize with large bunches, fairly well coloured; Mr. Fyfe, gr. to Lord WANTAGE, Lookinge House, Wantage, was 2nd.

In the Any Other White Grape Class, Mr. DAVIS came to the front with good bunches of Buckland Sweetwater; Mr. McDonald, gr. to W. B. MARLING, Esq., Clanna Sydney, Glas., was 2nd; seven lots were shown.

CLASSES CONFINED TO THE COUNTY OF SALOP.—Mr. LAWLEY was 1st, for two bunches of Black Hamburgh, compact, well-coloured bunches; Mr. DAVIS being 2nd with less compact but equally well-coloured bunches.

In the Any Other Black Class Mr. CARR, gr. to Sir OFFER WAKEMAN, Bart., Yeaton Peverry, was 1st with Madresfield Court; Mr. BRENNELL was 2nd with Gros Maroc.

Muscat of Alexandria.—Mr. CARR was a good 1st (out of seven exhibits), showing good solid bunches, fine in berry and fairly well coloured.

Two nice well-coloured bunches of Buckland Sweetwater secured 1st prize for Mr. LAWLEY in the Any Other White Class; Mr. CARR taking 2nd place with Foster's Seedling, fine in size and shape of bunch, size and evenness of berry, but requiring more time to colour.

AMATEUR CLASSES.—Mr. BURR, Oaklands, had the best two bunches of Black Hamburgh; and Mr. BARBER, Wellington, had the best pair of white Grapes, showing Foster's Seedling, MELONS (forty-two in number) were shown well. Mr. Townsend, gr. to Col. R. T. LLOYD, Aston Hall, Oswestry, had the best scarlet-fleshed variety, a nice Blenheim orange; Mr. Durnell, gr. to — KENYON, Esq., West Felton, Oswestry, was 2nd.

Mr. KIGNERSTAY, Leighton Hall, Trowbridge, had the best green-fleshed variety in Earl's Favourite; Mr. Birch, gr. to Mrs. WATKINS, Shotton Hall, being 2nd with the same variety.

NECTARINES.—Twelve good dishes of Nectarines were shown, Mr. HARRIS being 1st, showing beautiful fruits of Pitmaston Orange, of fine colour; Mr. McDONALD being 2nd with good fruits of Lord Napier.

PEACHES.—Out of fifteen dishes of Peaches Mr. Robinson, gr. to R. W. D. HARELY, Esq., Herefordshire, was 1st, with large even-sized fruits of Sea Eagle well coloured; Mr. G. Taylor, gr. to C. A. JONES, Esq., Carnarvon, taking 2nd with Barrington, fine in every respect.

APRICOTS.—Out of seventeen dishes of Apricots staged Mr. Bible, gr. to Lord Trevor, Brynkinalt, Chirk, was 1st with Moor Park; Mr. ROBINSON was 2nd.

PLUMS.—Mr. POPE, gr. to the Earl of CARNARVON, Highclere Castle, Newbury, had the best dish of Dessert Plums, showing fine fruits of Guthrie's Gage; seven lots were shown.

The Rev. T. M. BUCKLEY had the best dish of Culinary Plums, staging a grand dish of Prince Englebert; eight lots were shown.

CHERRIES.—Mr. BRENNELL had the best out of nine dishes of Cherries, showing a fine dish of Morellos; Mr. Walker, gr. to Sir R. HONYMAN, Bt., Colm, Whitechurch, was 2nd.

APPLES, Culinary and Dessert, were represented by fourteen dishes. The Hon. Mrs. KENYON, Whitechurch, had the best dish of dessert, showing Beauty of Bath.

PEARS.—Thirteen dishes of Dessert Pears were staged. G. F. WARD, Esq., Hadnall Hall, Salop, was 1st with Louise Bonne of Jersey.

VEGETABLES.

For nine distinct kinds of Vegetables, Messrs. BUTTON & SONS offered a cup valued at £5 5s., and £3 in money, as well as five other prizes. Ten splendid lots were staged, and the coveted honour was won by MORGAN WILLIAMS, Esq., Glyn Neath, Glamorgan (gr. Mr. Forley). Sutton's Solid White Celery was a marvellous exhibit, Alls Craig Onions of wonderful size, Prizetaker Leek large and good, New Beet, Intermediate Carrot in every way, Satisfaction Potato, Perfection

Tomato, Improved Blood Red Beet, Prizewinning Runner Beans. The 2nd prize went to Mr. POPE, who had a fine lot of produce, the collection being the same as that which won for him 2nd place in the first-named class; Alls Craig Onions, Perfection Tomatoes, and New Red Intermediate Carrot were his best dishes.

Messrs. J. CARTER & Co., High Holborn, London, offered six prizes for collections of nine distinct kinds, the 1st prize being £10, and the 2nd £5. Eight lots were staged. The coveted award was won by Miss TALBOT, Penrice Castle, Swansea (gr. Mr. Milner), who staged a very fine exhibit—consisting of Model Leek, grand; Autumn Giant Cauliflower, large and good; Intermediate Carrot, fine; splendid Jersey Lily Turnip, and good Perfection Tomato, Supreme Potato, Alls Craig Onion, and Duke of Albany Pea; 2nd, Mr. TOWNSEND.

POTATOES were shown largely and well, the tubers very well selected, even, and clean. Mr. C. FOSTER, gr. to MORGAN S. WILLIAMS, Esq., Glyn Heath, Glamorganshire, was 1st for three dishes, with Windsor Castle, Satisfaction, and Abundance, Mr. POPE being a capital 2nd with Satisfaction, Reading Russett, and Matchless.

Mr. WAITE had the best single dish, showing Windsor Castle.

Mr. FOSTER had the best collection of five varieties, showing fine tubers of Abundance, Reading Russett, Windsor Castle, Tennyson mottled with brown, and Boston, a good even clean lot of tubers.

PEAS.—Six lots of Peas, consisting of three dishes each were put up for Mr. ECKFORD'S Prizes. Mr. W. POPE, gr. to Hon. Mrs. E. KENYON, Melspen, Whitechurch, was 1st, showing Eckford's Rex, Eckford's Prior, and Eckford's Magic.

RUNNER BEANS were shown in good condition for the season, Mr. POPE (Highclere) being 1st with Sydenham's No Plus Ultra.

TOMATOES (for Mr. SYDENHAM'S prizes) were staged in good condition. Mr. Leith, gr. to J. R. GRAYTORREX, Esq., Myton Hall, Shrewsbury, was 1st out of twelve lots shown.

TURNIPS were shown in large numbers and in fine form. Mr. TOWNSEND was 1st in a strong competition.

ONIONS made a good show. Mr. WILLIAMS, Neath, had the best dish of nine spring-grown bulbs.

Mr. WAITE had the best dish of autumn-sown bulbs. This exhibitor also had the best dish of Parosips.

Several special prize schemes were devoted to Tomatoes (Runners), Carrots, &c.

MISCELLANEOUS EXHIBITS.

Messrs. J. VEITCH AND SONS, Chelsea, had a *recherché* group of Stove and Greenhouse plants, comprised chiefly of new or rare plants; Caladiums were very conspicuous, rich in colour and sturdy in growth, the best being of dwarf kinds, Le Nain Rouge, dwarf red, a fine for grouping; Chelsea Gem, a paler shade, very bright; and Baroness Schroeder, a creamy buff with crimson veins, and of larger kinds, B. S. Williams, fine in leafage; Baronne Adolphe De Rothschild, a deep metallic red, very fine, and Major Jockey, red on a pale coppery ground. Other choice specimens comprised Heliconia illustria rubricaulis, Phrynium variegatum from Baron Frank Selliers, Nepenthes mixta, N. Dicksoniana and N. Hookeriana; smaller plants were represented by the newer Dracenas, choice Ferns, some beautiful little plants of Rhododendron and of Lily of the Valley, which as massed had a beautiful effect; Exacum macranthum should also be noted, being in first-class character.

Messrs. J. VEITCH & SONS were awarded the Gold Medal of the Royal Horticultural Society, as offered by them specially in the schedule, for the exhibit (not for competition) which, in the opinion of the Council of the Royal Horticultural Society, best represents the progress of horticulture for the past sixty years. In addition, Messrs. VEITCH secured one of the three special Victorian Awards, viz., a full Desert Service of the value of £12 12s., for the most attractive display of rare plants. Another of these awards went to Messrs. JONES & SON of Shrewsbury for an extensive display of out flowers in great variety.

Messrs. KER & SONS, Alburgh Nursery, Liverpool, staged a lovely group of Crotons, small and medium sized plants, superbly coloured; the best of these were Prince of Wales, Reddi, Gordoni Morti, interruptus aureus, also several other choice kinds, the whole representing thoroughly the decorative value of the Croton when grown as these plants were, the whole forming a superb exhibit.

Messrs. COWAN, Liverpool, staged a large group of Roses in pots, dwarf plants, Lilies and Orchids, the latter consisting chiefly of Cattleyas, the whole being finished off with dwarf foliage plants, making a good display.

Mr. T. S. WARE, Tottenham, staged a long table of tuberous Begonias, arranged in a tasteful manner, and consisting of the finest single and double named kinds, remarkable alike for quality of flower and high-class culture.

Messrs. R. SMITH & Co., Worcester, arranged a large group of decorative flowering and foliage-plants with cut flowers, the chief features being the Gloxinias, Montbretias, and Lilies, with Bamboos.

Messrs. BACKHOUSE & SONS, York, showed a selection of the best Bamboos, tall and healthy plants, very light and elegant; also, Asparagus deflexus, and examples of their rockwork furnished with growing plants, which comprised a choice selection.

The third of these awards was made in favour of Messrs. FRITCHARD & SONS, Shrewsbury, for the most novel exhibit illustrating the progress of horticulture during the last sixty years; this consisted chiefly of Cannas in the best new varieties Ferns, and other present day plants and fr

From Mr. J. Hudson, gr. to LEOPOLD DE ROTHSCHILD, Esq. Gunnersbury House, Acton, came a collection of twenty-two varieties of hardy Water Lilies, mostly new. The best reds were N. Ellisiana and N. marliacca rubropunctata; N. marliacca alba was of large size, N. odorata sulphurea and N. pynosa helvola were prominent yellows. Of rose-coloured varieties, N. odorata rosacea and N. o. exquisita were good. The Gold Medal of the Shrewsbury Society and the Silver-gilt Flora of the Royal Horticultural Society were awarded.

Messrs. DICKSONS, Chester, staged a huge bank, chiefly of hardy flowers and small table plants. This was an exhibit of great merit, and very representative. Romney Coulteri, the Tree-Poppy, is a lovely white flower of large size, the white petal contrasting well with the yellow centre; it deserves to be more frequently seen. Platycodon Mariesii and P. Mariesii alba were exhibited. Crinum grandiflorum was good.

From Mr. A. MYERS, Florist, Shrewsbury, came a large collection of zonal Pelargoniums, and some well-flowered dwarf specimens of Campanula pyramidalis.

Mr. M. CAMPBELL staged Dahlias in variety, and good single annual Chrysanthemums, Princess May, Golden Gem, and Chieftain, &c.

Messrs. DOBBIE & Co. brought a large quantity of Dahlias Cactus and Pompon, Carnations, Violas, &c.

Mr. E. R. DAVIS brought a grand lot of tuberous Begonias from Yeovil Nurseries; some of the best were Victoria Regina, dark red; Mrs. Stothert, pale yellow; Mrs. Richmond, flesh colour; Ariel, white.

Messrs. W. & J. BIRKENHEAD, Fern Nurseries, Manchester, staged a large quantity of Ferns in considerable variety, British and exotic.

Mr. S. MORTIMER staged a large collection of show and Cactus Dahlias of first-rate quality. The best Cactus were Fusilier, Starfish, and Mrs. Wilson Noble.

Mr. E. MURRELL, nurseryman, Shrewsbury, staged an extensive and very good collection of Roses and Gladioli.

Messrs. JONES & SONS, Shrewsbury, put up a varied and extensive collection of Dahlias in variety, and hardy flowers, including annuals, well and effectively staged.

Messrs. CARTER, High Holborn, London, brought an exhibit of flowers in pots and cut. The staging was good.

Mr. J. H. WHITE, nurseryman, Worcester, staged hardy flowers, Grapes, and a new Tomato, "Majestic," of large size.

Messrs. PROCTOR & SON, Chesterfield, brought Carnations in variety. Messrs. WEBB, Stourbridge, were also represented.

Mr. ECKFORD, Wem, Shropshire, staged Sweet Peas in great variety, and of good quality.

Mr. W. F. GUNN had a meritorious collection of hardy flowers.

Medals Awarded by the Royal Horticultural Society.

GOLD BANKSIAN.

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, for best representative Victorian Era Group.

SILVER KNIGHTIAN.

Earl of Harrington (gr. J. H. Goodacre), for Decorative Dessert-table.

SILVER-GILT KNIGHTIAN.

Sir J. Pease, Bt., Hutton Hall (gr. J. McIndoe), for his exhibit in Victorian Fruit Class.

SILVER BANKSIAN.

Mr. A. Myers, Shrewsbury, for Fuchsias; Messrs. J. Cowan & Co., Ltd., Garston, Liverpool, for Group of Tea Roses, Lilies, and Orchids; Mr. T. Pritchard, Shrewsbury, for Collection of Vegetables; Mr. A. Myers, Shrewsbury, for Zonal Pelargoniums; Messrs. DOBBIE & Co., Rothsay, N.B., for Dahlias, &c.; Mr. M. Campbell, Blantyre, N.B., for Carnations and Picotees; Earl of Carnarvon, Newbury (gr. W. Pope), for Collection of Vegetables; Morgan Williams, Esq., Glyn Neath (gr. C. Foster), for Collection of Vegetables; C. E. Newton, Esq. (gr. J. Campbell), for Muscat Grapes.

SILVER FLORA.

Messrs. R. P. Keir & Sons, Aigburh, Liverpool, for Crotons; Mr. J. S. Ware, Tottenham, for Tuberous Begonias; Messrs. R. Smith & Co., Worcester, for Group of Plants; Mr. B. R. Davis, Yeovil, for Tuberous Begonias; Mr. E. Murrell, Shrewsbury, for Roses and Gladioli; Messrs. Harkness & Sons, Bedale, for Collection of Hardy Buds and Tuberous Flowers.

BRONZE BANKSIAN.

T. Birch, Shrewsbury, for Collection of Vegetables; Miss Talbot, Swansea (gr. R. Miller), for Collection of Vegetables.

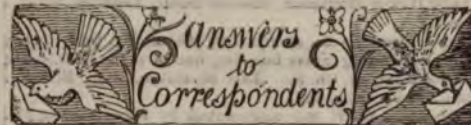
PRESENTATION TO THE SECRETARIES

A pleasant incident in connection with the show was a presentation to Messrs. H. W. Adnitt and W. W. Naunton, the Hon. Secretaries. A committee was formed some weeks ago, Mr. A. Outram acting as secretary, and Mr. O. Thomas as treasurer. Sufficient funds were easily raised for the purchase of two handsome silver centre-pieces for the dinner-table. Each bore the name of the recipient, and the words, "Presented by horticultural friends, in recognition of services to horticulture." Sir Trevor Lawrence made the presentation. All who have any knowledge of the Shropshire Society will know how well the gentlemen have deserved this recognition.

Obituary.

WILLIAM FOWLER.—The death is announced of Mr. W. Fowler, head gardener at Clifton Park, Baltimore. Deceased was born at Kelvin Grove, near

Glasgow, in 1822, and commenced his horticultural career in the Glasgow Botanic Gardens. He afterwards went to Kew, and remained there until 1848. In that year he went to America, and subsequently to Australia. Returning to America, Mr. Fowler was engaged by the late Jno. Hopkins upon the Clifton Estate. It was the intention of Mr. Hopkins to have the university bearing his name established on the Clifton ground, and at the same time to have Mr. Fowler plan and lay out a botanical garden there, but through the untimely death of Mr. Hopkins the plan fell through. Mr. Fowler, who was at Clifton forty years, planted many rare trees and Conifers there, but some of these were cut down and grubbed out last season. A considerable number of horticulturists attended the interment on the 26th ult.



BULBS: *Subscriber.* If you read French, as you probably do, you will find Guichéneuf's *Les Plantes Bulbeuses*, Paris, Octave Doin, suitable for your purpose.

CARNATION SEEDLINGS: *D. & M.* The flowers were considerably withered when they reached us. Several of them are well worth cultivating, but we do not recognise anything unusually superior in them. Their exact value could only be determined after seeing them in perfect condition, and ascertaining the habit of each variety in comparison with similar ones previously raised.

CHRYSANTHEMUM: *Ambitious.* 1. The Edinburgh Society allow exhibitors to place in the vases Chrysanthemum foliage other than that growing on the actual stems containing the blooms exhibited. The committee found that the foliage upon the stems containing the blooms does not keep fresh, thus this was detrimental to all the exhibits. Hence the concession to all alike. 2. The appearance of incurred Japanese blooms can be slightly improved by removing misformed petals, beyond this they are not dressed like the ordinary incurved section. 3. Cut the blooms with sufficient stem, wrap the base with wet moss, covering the moss with paper; wrap the whole stems and blooms in soft tissue-paper, taking care to have all the leaves erect in the paper. Lay the stems in a long shallow box, one bloom resting at the base of its neighbour. Do not lay one upon another. *E. M.*

CLUB ON MELONS: *Subscriber.* You probably mean eel-worms; if so, you can do nothing but burn the plants, turn out the soil, and get fresh.

CORRECTION.—In the fifth line of my letter to you, p. 111, the word "same" has been rendered "cause," thus making me say the very opposite of what I intended. *R. D. Blackmore.* [We can only express our contrition. *Ed.*]

CUCUMBERS: *E. J.* The plants are weakly, but the roots are healthy, and we see no sign of actual disease. Probably your treatment has been, or is, at fault.

CUCUMBERS—TOMATOS: *A. A. L. G.* Any flat basket or box would answer for Cucumbers if properly packed with moss or wood-wool. Tomatos should be sent in flat boxes or baskets with a cross handle, and holding about a dozen pounds. We do not know at the moment where they can be obtained, but the salesman would probably provide them on application.

FIGUS ELASTICA: *Hortus.* We are unable to say what has caused the injury, but it is most improbable that it has arisen from cold or wind.

FRUIT TREES ON LAWN: *Richmond.* You cannot do better than give the trees plenty of liquid from farm-yard manure. It may be applied when most convenient, but preferably in spring and early summer.

INSECT ON PEARS: *M. C.* Your leaves are eaten by the slug-worm, *Selandria atra*, a species of sawfly, frequently described and figured in these columns. Dust the leaves with tobacco or hellebore-powder, but take care not to do so when there is any fruit ripening.

INSECTS: *Miss B.* A fossorial Hymenopterous insect, of the numerous genus *Crabro*. The flies are dragged into the burrows as provision for its grubs. *R. McL.—E. W.* A caterpillar of the

"Elephant" Hawk-moth (*Chorocampa elp*) about to change to chrysalis when received feeds on *Epilobium*, *Fuchsia*, &c. *R. McL.*

MELONS: *T. B.* We should prefer not to give Melons carrying fruits of much size. It induces them to crack.

NAMES OF FRUITS: *R. V. & S.* Apple: produce some local sort not known here; Peach: *Pro Violette Hative.—T. B., Esq.* Apple: *Sudeley.*

NAMES OF PLANTS: *Correspondents not named in this issue are requested to be so good as to send the following number.*—*E. S.* Ashford Soli-lago canadensis; 2. *Magnolia grandiflora*; Catalpa syriacifolia.—*F. S.* Aralia mandsch.—*G. B.* Alpinia nutans, *Bot. Mag.* 44, t. 19. *J. R. Villenoy, France.* Odontoglossum Lianum varies very much, and your specimen seems to be but a variety of that species. The green flower is *Lycaste linguella*. 4. *Mesospidium guineum*. The other specimen was not found, had probably fallen from the box, which was broken.—*A. H.* *Gongora galeata*.—*G. H.* *Catasetum macrocarpum*. It is interesting to see that your treatment of the *Gloxinias* continues to be successful.—*G. W. H.* *Paulownia imperialis*. *T. D.* Matter insufficient for determination. *Ontario*, *Melilotus alba* alias *M. leucantha*.—*H. Hamburgh.* *Encephalartos Ghellinkii*, of *Lehm*.—*E. A. W.* *Ulmus montana* var. *Pittier*. *J. H.* 1. *Conoclinium lanthimum*. 2. *S. latifolia*. 3. *Veratrum nigrum*. 4. *Thalictrum minus*. 5. *Colutea arborescens*. 6. *A. rupestris*.

PANSY: *T. B.* Your question is by no means what you send is a Pansy flower from a worn plant, which has probably flowered in spring and is now for the time exhausted.

PEAS DISEASED: *J. C., Shadwell.* The disease is due to the presence of the Pea-mildew, *Peronospora viciae*. As the disease appears to be well established with you, spray at intervals of ten days with solution of potassium sulphide, as a preventive from the time the Peas are 4 inches high until bloom appears. *G. M.*

PINK AND VIOLET-ROOTS: *V. D.* We find no sign of eel-worms, but the plants have been too deeply buried in the soil.

RASPBERRY CANES: *W. B. H.* The fungus *Pleospora vulgaris* is the cause of the mildew. Collect and burn all diseased canes; if they are allowed to remain the fungus continues to grow throughout the winter, and inoculates the young canes in the spring. *G. M.*

SWEET PEAS: *S. R. V.* For the best Sweet Peas for market work, consult Mr. Eckford, of Salop. Your other question may be addressed to Messrs. Kelway, Langport, Somerset.

TOMATO: *Anxious.* The leaves are attacked by fungus, *Cladosporium fulvum*. It is too late to do much beyond removing the leaves and burning them. Another year an occasional spray with Bordeaux Mixture will be useful as a preventive.—*J. G.* Your fruits are affected with spot, so often figured and described in *Gardener's Chronicle*. You can do nothing now but burn affected fruits. Another season try spraying with Bordeaux Mixture, soon after the flowers fall upon the leaves once or twice during growth.

TREE CARNATIONS: *L. H. S.* In the *Cornwall Manual* (Cassell & Co.) are two chapters devoted to this subject; the cost is a few shillings.

VINES: *Perplexed One.* To induce your Vines to colour well, get the canes thoroughly well pruned each autumn. Do not over-crop. See that the borders are well-drained and sweet, and give a good supply of air to the house whilst the berries are ripening with a little warmth in the hot-water pipes. You may have to continue the heat a little longer than the case of Gros Colmar. You can syringe Peach trees with nothing strong enough to scale that would not also injure the fruit. You might kill the scale with a small quantity of methylated spirits, but keep it from the leaves. When the leaves have fallen, the task will be more easy.

COMMUNICATIONS RECEIVED.—Secretary of Scottish Horticultural Association.—*M. de V.—W. R.—N. E. Br.—G. W. T. T. D.* (with thanks).—*P. E.—E. M. H.—G. H.—D. T. F.—C. S.—T. B. M.—H. G. C.—W. H.* (with thanks).—*Ed. Conner.—A. Cottam.—A. C. F.—W. F. & Co.—C. S.—J. Douglas.—J. B.—D. T. F.*

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THE Gardeners' Chronicle.

SATURDAY, AUGUST 28, 1897.

THE INTERIOR OF WESTERN AUSTRALIA FROM A HORTICULTURAL POINT OF VIEW.

WERE it possible for a botanist, without knowing in what part of the world he was, to find himself upon one of the low hills which rise from the great elevated table-land of the West Australian desert, he would see in every direction an apparently dense forest reaching far as the eye could follow it. The landscape might here and there be diversified by great masses of bare granite projecting from the verdurous maze, or in some distant valley a stretch of dazzling white would tell of the presence of a salt lake; but the main fact impressed upon his imagination would be the luxuriant covering of vegetation stretching out before him, mile after mile, to the very verge of the horizon, where it would stand as if embossed against the brilliant blue, in a fashion quite unknown to inhabitants of, or visitors to the moister climates of Europe.

Were our botanist now told that he was stationed in the midst of a desert, with an annual rainfall of not more than from 3 to 5 inches, tempered with long spells of fierce drought, his incredulity would surely have some excuse, and yet be entirely without foundation. But he would begin to doubt his first impressions on descending to the plain. Here he would at once notice, between the sparsely-placed shrubs or trees, large patches of loamy-red, or may be of loose and glistening white sand, of which the only occupants would be a few struggling blades of grass, for the most part dry as tinder, clustering wherever a bit of shade might seem to promise some alleviation from the sun's burning rays. Life there would be none, except possibly for some scared and hurriedly fleeing lizard; though swarms of flies, intent on making life a burden to the rash explorer of their dreary domain, would certainly attend his progress. Over all a stillness as of death, save that now and again some faint breeze would quicken the listless Gum-trees, making their leaves sparkle like so many tiny mirrors; or a stronger wind, suddenly arising, to pass away as suddenly, seize in its mighty grasp whatever happened to be near, while a column of red dust, hurled skywards, would mark its triumphal progress. Nor, upon further inspection, would still plainer signs of an inhospitable climate be wanting. Leaves might be seen wilting on their stalks; branches, dead and dry, still attached to a trunk manifesting some show of life; perhaps a flower or two, faded and dried before the seed had been set, or young fruits scorched ere time had been given them to lay on a sufficient thickness of protecting tissue. Signs such as these would all tend to convince our wanderer that no attempt had been made to deceive him, and that in spite of appearances from the hilltop, his present lot was cast in a veritable desert.

But there is a reverse to this picture. After heavy rain—alas! a very occasional blessing—or in early spring, before the sun has regained its power, the botanist may, in favourable situations, find a fair number of floral treasures. Springtime is certainly the most profitable for collecting, as then numbers of lowly annuals, which could not possibly exist when the sun begins to scorch the ground, put in a welcome appearance, so enlivening the country as to make one confess that the desert is not altogether without its share of beauty. Nay, we have seen specially favoured spots where dense masses of pink, snow-white or yellow everlastings, made a foreground which, one might venture to aver, would have been pleasing even to such masters of colour as Titian and Millais. These pink everlastings are the well known *Helipterum Cassinianum*, more familiar in cultivation as *Schoenia Cassiniana*; the yellow are chiefly *Waitzia corymbosa*, *Helichrysum semipapposum*, and *Helipterum Haighii*, the two latter well worthy of being introduced into gardens, especially *Helipterum Haighii*. *Podolepis pallida* is a lovely yellow everlasting, much in the style of *Podolepis acuminata*, but with heads a little smaller. We saw one spot—the flank of a great granite outcrop not far from Coolgardie—covered with the pale golden nodding flower-heads of this plant, forming a literal “field of cloth of gold,” and a fine sight it certainly was. Of white everlastings may be mentioned the abundant *Cephalopterum Drummondii*, whose picturesque massed flower-heads mark it as a meritorious aspirant to the honours of cultivation; *Helipterum rubellum*, equally abundant and, in spite of its specific name, usually showing white involucres, and *Helipterum Fitzgibboni*, with curiously flat heads, recalling somewhat those of the double Daisy, and chocolate outer involucre scales. Other notable everlastings are *Athrixia tenella*, with small yellow fluffy flower-heads—a quaint-looking thing; *Helipterum roseum*, a very graceful plant, of which only the white-flowered variety was met with; the more modest *Helipterum strictum*, and though last, not least, that charming introduction, *Rhodanthe Manglesii*. This latter, as a rule pink-headed, though sometimes white, grows only in well-watered spots upon the granite rocks which outcrop in various places all through the interior of the colony.

Some of the West Australian Sundews are very pretty, and, the climbing ones especially, will doubtless in time be recognised ornaments of the conservatory. The handsomest seen by us were *Drosera macrantha*, with large snowy blossoms, and *Drosera Menziesii*, var. *flavescens*, with yellow. *Ionidium floribundum* is a lowly shrub with flowers, strikingly recalling a “counterfeit presentment” of those of the wild Pansy, only on a smaller scale. As a cultivated plant it could not for a moment be compared with its flaunting congeners; but it would be valuable to the gardener, if only because of the lavish way in which its flowers are produced. The reverse must be said of *Marianthus lineatus*, as its white and chocolate-striped flowers are larger than those of the cultivated *Marianthus cæruleo-punctatus* and *Drummondianus*, though some might prefer these latter on account of their extreme elegance. Malvaceæ are not abundant; the best from a horticultural point of view collected by us is the purple-flowered *Hibiscus Krichauffianus*; and among Sterculiaceæ the only one of much worth is *Keraudrenia integrifolia*. This bush, which one finds only close to granite rocks, has flowers like those of a *Rulingia* until

pollination occurs, whereupon the purple calyces enlarge to the size of a half-crown, and as they are borne in plenty, the plant at this time makes a handsome show.

Myrtaceæ are in strong force in the desert; indeed, in some parts they constitute the bulk of the flora. Species of *Thryptomene*, *Micro-myrtus*, *Verticordia*, &c., are not of much account to the horticulturist, but the magenta-flowered *Wehelia thryptomenoides* is more worthy of notice, and *Kunzea sericea*, with its large trusses of red or cream-coloured blossoms, needs only to be seen to be admired. Another well-represented order is that of the *Goodeniaceæ*; one of these, the well-known chaste little *Brunonia australis* is rather common here and there, as also are the yellow Mimulus-like flowers of *Goodenia mimuloides*, while you may see the blossoms of *Dampiera lavandulacea* in places on the granite, where water is apt to collect after rain. But the gem is undoubtedly a new *Velleia*, found on the bank of a creek in the far interior. This, with a fine disregard for convention, sports flowers of a lovely rose hue—a most rare occurrence in the order. Unfortunately, search how we might, we could find but one specimen of this, and that had not yet formed its capsule.

There are some pretty spinose *Solanums*, notably *Solanum lasiophyllum*, which you may find anywhere close to the granite outcrops, and a new species, allied to *Solanum orbiculatum*, with small round woolly leaves and purple flowers. Moreover this mention of *Solanaceæ* recalls a remarkable variety of *Nicotiana suaveolens*, assuredly the smallest of all the tobaccos, its stems sometimes only a couple of inches high, and the rosette leaves not even that length! We do not anticipate any ardent desire on the part of growers of the fragrant weed to raise a crop of this veritable tom-thumb of a plant.

Of course *Leguminosæ* are well to the fore, being represented by *Gompholobium*, *Gastrolobium*, *Phyllota* and other genera; most of them, however, have much similarity to species already cultivated. A notable exception is a new *Oxylobium*, a fine shrub reaching 6 feet in height, with large, deep-green leaves and long racemes of orange-coloured flowers. Neither are the *Acacias* of much account, as almost all the desert species have small inconspicuous spikes, though this cannot be said of *Acacia acuminata*, whose splendid phyllodes and inch-long blooms should gain for it unstinted welcome.

Eremophilas and *Pholidias* abound, and several new species of both genera—some of them deserving a horticulturist's notice—were brought down with us. Worthy of mention, too, is *Prostanthera Baxteri*, of which the flowers are pale lavender, or white streaked with purple; and, indeed, very like those of *Prostanthera nivea*, already an inmate of our conservatories. Another species, *Prostanthera Gryllana*, with dull-red flowers, would be of service to the nurseryman.

There is not much to be said about the *Proteaceæ*. Though they abound, the usual thing is for the flowers to be put forth but sparingly; but this is perhaps due rather to the prevalence of unfavourable conditions. There is, however, one charming *Grevillea*, a graceful shrub, 10 feet high, with cream-coloured flowers of cloyingly sweet scent. In deference to the authors of the botanical portion of the *Elder Expedition Report* we have called this *Grevillea nematophylla*, though it differs in some respects

from the Simon pure, an east Australian species. We have ventured to deal differently with a fine *Hakea*, called by the authorities above-named, *Hakea lorea*, but, in our opinion, so different from Robert Brown's plant as to leave no alternative but its description as a novelty.

Numerous species of *Trichinium* and *Ptilotus* serve to keep up the reputation of *Amaranthaceæ* as pre-eminently a desert-loving order. The finest of them is *Trichinium exaltatum*, introduced into cultivation long since. Without doubt, the prettiest of the unimported ones is *Trichinium Carlsoni*, which, in refreshing contrast with the eternal iteration of white or pink flowers indulged in by *Amaranth*s, bears heads now of an orange, now of a lemon-yellow colour.

As might be expected, orchids, so abundant in better-watered districts of the island-continent, stand at a high premium in the desert. Besides *Thelymitra* and *Pterostylis*, there are only two genera, *Diuris*, of which a few species are known in cultivation, and *Microtis*. The *Thelymitras* are the well-known blue *Thelymitra longifolia* and the yellow *Thelymitra antennifera*; the latter, unless we mistake, is not yet introduced. The *Pterostylis* is *Pterostylis pyramidalis*, a somewhat critical species, not likely to be warmly welcomed, inasmuch as it is so like others long familiar to the lover of plants.

From the above remarks the reader will probably gather that, at least from a botanical standpoint, the West Australian interior is not quite so poor as hasty inspection during the hot season might lead one to suppose. By no means, however, do we expect this article to result in setting the emissaries of our *Veitches*, and *Bulls*, and *Lindens* tumbling over one another in their eagerness to experience the delights of the desert, including, as such, a scorching sun, clouds of dust, and flies by the legion, with the chance of a wash in Heaven's good time! But there is one thing that might be done; any horticulturist happening to have a relative or acquaintance over there engaged in propitiating the fickle Goddess, might do worse than ask for a consignment of the seeds of any plant likely to strike the fancy. In this way, many a charming flower, now literally wasting its sweetness on the desert air, or, at best, looked on only by the careless miner or the naked — or, still worse — the semi-civilised savage, would have a chance of becoming a thing of beauty to a wider and more appreciative clientèle. *S. M.*

NEW OR NOTEWORTHY PLANTS.

LUDDEMANNIA SANDERIANA, Krzl., n. sp.*

A VIGOROUS-LOOKING plant, with strong ovoid, furrowed bulbs, and 3–4 leathery lanceolate leaves on each of them. In general habit it resembles

* *Luddemanna Sanderiana*, Krzl., n. sp. — Pseudo-bulbis magnis crassis obscure quadrangulis multicostatis tri-tetraphyllis, ad 10 cm. altis, 4–5 cm. diametro; foliis oblongis acutis ad 15 cm. longis, ad 5 cm. latis; scapo nutante v. pendulo pluri-multifloro; bracteis scariosis oblongo-lanceolatis acutis, 1.8 cm. longis ovarium nigro-fururaceum fere æquantibus; sepalis dorsali obovato-oblongo acuto, sepalis lateralibus basi paulum productis longioribus oblongis acutis; petalis cuneato-ovatis acutis, labelli lobis lateralibus oblique ellipticis fere orbicularibus erectis rotundatis, intermedio rotundato margine crenulato apiculato, toto disco velutino, callo elato a basi medio usque dense piloso; gyno: tamo sepalum dorsale fere æquante supra dilatato, rostellum productum acuminatum. Sepala alba v. pallide lutea, 1.8 cm. longa, 9 mm. lata, dorsale brevius, petala 1.5 cm. longa, ad 6 mm. lata; labello album; turpuro-striatum, et præsertim in callo purpureo-piloso, 1.2–1.5 cm. longum; gynostemium 1.2 cm. longum, album purpureo-punctulatum.

Colombia pr. Medellín, import. F. Sander, F. Kränzlin.

much that of *Luddemanna Lehmanni*, but it differs at first glance by the cream-coloured flowers and the lip, and to this part of the flower the most important characters of specific value are confined. The lip is also white, but with dense purple blotches and spots; the basal part especially is covered by a dense cushion-like hairy callosity of the darkest purple; the side-lobes are oblong, and the middle-lobe rounded. The spike hangs downwards, and bears about 20–25 flowers, and when just opened the appearance is very pretty. The colour turns after two days from creamy-white into a yellowish-mauve, and the purple into black. *P. Kränzlin.*

METHODS OF PROPAGATION.

(Continued from p. 85.)

PROPAGATION FROM EYES. — The India-rubbers, *Ficus elastica* and varieties, are readily increased from single eyes; but, unlike the Vines, had better have their buds started by heading back the shoots of the old plants set aside to propagate from. As soon as these buds have grown an inch or two, cut right through the parent-stem above and below the bud, and insert the piece carrying the started eye into a thumb (72) pot filled with sandy-soil, and when you have prepared sufficient for your purpose, plunge the whole up to their rims in a hot-bed of cocoa-refuse or tan in the inside lights of the propagating-pit, and after watering copiously, keep close for a week or so. Plants so raised make the best small specimens for all kinds of decorative work; and though the ordinary cutting-method is quick and good, yet it goes without saying, that if we have a scarce or rare plant to deal with, if one can make a saleable plant from every bud, it is better than sacrificing six to compass the same result. The variegated form of *Ficus elastica*, as well as the elegant *Ficus Hahnii*, and others of the genus, may all be thus propagated. I was set wondering how our American friends managed to work up such a large stock of any new Rose they send out in such a short time as they managed to do; and being of an enquiring mind in all matters relating to propagation, I soon gathered the following useful facts: — It is by using every single eye or bud, where possible, and rarely are two taken, where the wood used is fairly stout and ripe.

In the United States much of the propagation is done on benches or stages, which are heated from beneath by tanks, or hot-water or steam-pipes. These are covered with 4 to 5 inches of light soil, and the heat soon permeates this, and there is formed a bed in which all kinds of cuttings can be rapidly struck. But to return to the new Rose. When the temperature is regular throughout the bed, a pot-plant of the Rose is taken and cut up into pieces an inch or two long by diagonal incisions, each carrying a single bud or eye, with its leaf still attached to the node. The leaf may be shortened by removing the centre leaflet and the two next below it, when the eye or cutting is finished, and they may at once be dibbled into the hot-bed. In order to compass success in this process, the wood from which the eye has been cut must be of the current season, and have been grown under glass; to this end, propagators have always a batch of stock plants at their command, and then the only other proviso is that the plant from which it has been cut is in vigorous health, neither attacked by mildew, or rust, nor any insect-pest. Thus treated they root quickly, and as soon as they have made a little top-growth, they may be taken out of the soil in which they were struck and potted into single pots, being very careful not to bruise the young and tender wood in the process, or it will turn black and die. Shade for a time, say till the young rootlets appear at the side of the pots, when it may be dispensed with, except just in the middle of the day; but Roses are very apt to scorch. Plants raised thus, especially of the Tea and Noisette section, are the very best for pot work, for forcing, and for planting-out in span-pits, to grow for cut-flowers.

The plants of the new Roses received from the growers in May and June, are, as a rule, in just the

condition to furnish single eyes for this purpose, but it is waste of time to attempt to propagate Roses thus, when from any cause they have lost their foliage. In gardens or nurseries there are no means of extemporising a bench such as have indicated, the best substitute for it is a deal box about 6 inches deep, filled with soil, and plunged in fermenting dung or tan. The Rose may be then dibbled into this, and with careful attention to temperature, moisture, and shade, will be satisfactory, if not entirely successful.

Besides Vines for fruiting purposes, any tribe can be raised from single eyes, such as the leafed or Parsley, and the purple-leaved Grape, any of the Virginian Vines (*Ampelopsis*) can be multiplied; and that reminds me that the useful and deservedly popular *Ampelopsis Veitchii*, from started eyes, can thus be propagated indefinitely. Take an old well-branched plant of this useful and plant it out in a warm propagating-house, or in a Melon or Cucumber-pit, and as soon as it has growth, which it will from nearly every bud, allow them to grow from 4 to 6 inches long, and remove them with a sharp knife close to the old stem, and dibble them into the soil of your hot-bed, or in a cold frame, and shade for a while, and in a very time each piece will root, and may have a short put to it, or be lifted with a little ball of earth, be potted into a small 60-size pot, being careful not to break or disturb the tender root-fibres. Hardly, and then plunge out-of-doors under a glass, or hedge, and if large plants are desired, and stake with a longer stake each time they are shifted.

Thus much for single eye propagating, but I wish to suggest that I have exhausted the subject. *Experience.*

(To be continued.)

MR. HARRISON WEIR'S GARDEN.

As the traveller speeds through the station at Epsom, on the South-eastern Railway, he can fail to be attracted by the geological section which railway makers have exposed to view on either side a little distance from the platform. The railway cuts across a noble mould of greensand, and on one side an arch is formed of huge blocks of sandstone, pieced together as the stones of a bridge, and with beds of sand between the layers of rock. On the one side of the rail is the garden of Mr. Barri Crawshaw, all aglow when we saw it with oriental Poppies, and rich in selected flowers of *Odontoglossum crispum*. On the other side, as we are going down the line, is the residence of an old friend and valued correspondent, Mr. Harrison Weir. It is not for us, in his presence as it were, to dilate upon the service his artistic pencil has rendered for so many years to humanity. To our readers will be specially known not only as an artist, a naturalist and a gardener. Knowledge of his work begets a desire to see his garden, and his work begets a desire to see his garden is so often an index of a man's tastes if his character. It is almost needless to say Mr. Weir's garden is unconventional. It would drive a soil-scraping, root-denuding, verge-cutting gardener to despair. Flower-beds and herbaceous borders in the narrow technical sense there are none, and the whole garden is one vast floral spectrum. There may be some soil somewhere, in fact we are sure there is, but it is not visible, so thickly is it covered with motley flowers and diverse foliage. So there must be a plan, and a one skilfully carried out, but it is not apparent till one looks for it. The garden in fact occupies part of the slope of the hill, and mound we spoke of. It descends sharply from the house at the top of the bank to a terrace looking the rail, and from which a fine view of the Kentish downs is obtained. Narrow paths lead from terrace to terrace, amid a wild of gay flowers, tall perennials and lowly and bushy shrubs, and aspiring trees.

Mr. Weir is, as we have said, an enthusiast

plants—he finds beauty in all and each—so would not be practicable even if it were desirable to enumerate his treasures. Moreover, so many and diversified are they that the aspect of one week is notably different from that of another. Take the year through, never will there be a day in a garden like this where some cannot be found to admire and instruct. What the weeds! some one will say. Well, there are some—and there are none—a paradox that is solved by the fact that, while care is taken that shall be obtrusive, or occupy space where they are not wanted, others are left to grow at their own will, or at least with as great freedom as the place allows for existence in so densely peopled a garden. The Foxglove is one of the local weeds, and is duly cherished. It is a lesson in taste and civility to hear the proprietor descant upon the form and colour of some of these too often

stop. Our readers will feel that reticence in this particular will give a juster notion of an artist's garden than any cut and dried enumeration of sesquipedalian names could do.

THE WILD APRICOT AND THE GRAFT.

THE culture of the Apricot has been traced as far back, in the history of nations, as the Assyrian period, and at least two Latin authors, Pliny and Columella, refer to the tree as a variety of the Plum, and as a native of Armenia [and the former states that it had been introduced into Italy about thirty years. Ed.]. As regards its origin, modern researches have shown that the Apricot does not grow wild either in Armenia or in the Caucasus; and, according to Reynier, the stretch of African territory extending from the river Niger to the Atlas range of

grafted themselves thrive therein, and the necessary amount of heat is also available. In its native country, and in Central Asia, the natives propagate the Apricot by seed. True reproduction is, however, only obtained by means of the graft, and to this end the Peach-tree is generally used as the subject in the region of the Vine, where the Almond-tree is, however, preferred in calcareous or dry soil. In more northern latitudes, as in Central Europe, and in irrigated or damp ground with a good subsoil, the stock generally adopted is that of certain varieties of the Plum-tree, such as Myrobalan St. Julien or Damascus.

At the last (and first) Pomological Congress which, not long ago, was held at St. Petersburg, a well-known Russian horticulturist, M. Simirenko, drew attention to the value of the wild Apricot for grafting cultivated varieties of the Apricot itself, as well as those of the Plum and Peach trees. He gave it as



FIG. 39.—VIEW IN MR. HARRISON WEIR'S GARDEN AT SEVENOAKS. (SEE P. 138.)

ed plants. So great is the elegance in the form and foliage of many of them that it is a pity they are more often suffered to remain where they are, than to be removed to other parts of the garden, where they would add to the general charm by the varied form and colour of their leaves, and inflict little or no injury on the plants they associate. A little attention in the way of digging before the seeds are ripened will prevent their undue multiplication, whilst a similar attention to their subterranean reproduction is afforded by the number and variety of the competitors. If the seeds are not sufficient to keep the unruly in check, they may be turned in, but with the precaution of not allowing them to become the greatest part of the whole.

On the high ground are flowering shrubs in profusion, and a selection of ornamental and "picture" plants, whilst Mr. Weir's pomological inclination is shown in the representation elsewhere, as also do the various other things which he writes so pleasantly. Reading this note over, we find that he has mentioned a single plant by name, and so, we should not have known

mountains, is to be regarded as its original habitat. The introduction of the Apricot into Europe is apparently due to the Romans, at first into Italy, then into Greece, and subsequently and gradually throughout the central European region.

Considering its southern origin, a considerable amount of heat is naturally required for the complete maturation of the fruit, and hence it is that, under ordinary conditions, the Apricot grown in, say, the south of France, is much superior in flavour to that obtained in the open air in more northern latitudes. The tree, moreover, enters into development at an

early date, because of the damage that considerable results which are caused by the disease, as

his opinion, based on the results of many years' experience, that *Armeniaca vulgaris* is the most valuable subject in this connection, inasmuch as it shows no antipathy to any variety of the above-mentioned fruit trees, which develop vigorously and luxuriantly thereon. The wild Apricot is, moreover, remarkable for its powers of endurance, and in the province of Kieff, where the winter is very severe, the tree has never been known to be injuriously affected by frost, an advantage which the other ordinary subjects do not possess. Early in the spring of each year M. Simirenko grafts indoors some thousands of Plum trees on the wild Apricot, of which plants are preferred, for the Apricot and Peach, which are at least a year old. If the graft is unsuccessful, the subject is cut low down in the autumn, so as to make use of the shoot which is thereby subsequently developed. M. Simirenko obtains his supply of wild plants by seeds sown in the autumn, and young plants are obtained very regularly if the trees are not too crowded.

regards the Plum tree, which demands a

moist soil, Hungarian varieties in particular, the wild Apricot is of particular advantage, inasmuch as it thrives well on dry land, and irrigation or watering is consequently less necessary. The roots of the wild Apricot, moreover, do not encumber the soil, and because the shoots remain full of sap until late in the season, the rind is easily detachable in the autumn, so that the process of grafting [budding. Ed.] can be delayed beyond the busy summer. As regards resistance to low temperatures, M. Simirenko states, as has indeed been also observed in America and in Germany, that P. St. Julien is the most susceptible to frost, and that trees grafted on P. Myrobalan are not very long lived. The President of the French Pomological Society, who has recently referred to this subject in the *Pomologie Française*, testifies to the same effect, the average duration of Apricots so grafted in the Ain department, for instance, not exceeding four years. Nor does the cause appear to have been hitherto explained; the Apricot almost invariably grafted on the Plum in France, grows at first very vigorously, the scion dies, though the subject (stock) continues to thrive. It is, therefore, suggested, as was, indeed, proposed by M. Carrière many years ago, that *Armeniaca vulgaris* might be adopted in this connection with considerable advantage in France, not only in the warmer districts, but also in the more northern region, where the Apricot does not naturally grow to perfection.

The wild Apricot is widely employed for grafting purposes in the Crimea, especially so in Bessarabia, and the Germans are now importing large quantities of young plants of this kind from Russia. It is also interesting to note, in conclusion, that many native tribes of the African region which, as I have already stated, is the native habitat of the Apricot, are sufficiently good horticulturists to know the value of the wild variety for purposes of grafting. *Scion*.

THE DISEASES OF PLANTS.

(Continued from p. 118.)

Treatment of Seed for Fungi.—Seed mixed with fungus-spores is the source of not a few diseases of crops. The winter spores of most fungi are adapted to lie dormant for long periods, and, as most of them ripen along with the plants inhabited by the parent fungus, they readily find their way into seed. This is particularly the case with the diseases known as smuts and bunts, but also happens with rusts, mildews, and other fungi. The spores germinate along with the seed, and the fungus readily makes its way into the young seedling plants. In fact, certain diseases, e.g., smuts and bunts can only attack their host-plants in the seedling stage, and that they do so successfully is proved by the number of black-smutted ears one sees in almost every field of Oats or Barley. Other smuts are common and injurious on Onion, Beet, Carnation, and Violet, also on wild plants such as Thistles, Anemones, Primulas, Hyacinths, and their allied cultivated forms. In every case the smut starts from the winter spore, and enters the young plants; at first, and for a long time, there is no external indication of disease, the fungus keeping out of sight, but in pace with the growth of the plant. The smut does not appear till the flowers are formed (sometimes it may be in the foliage), then it breaks out as pustules which shed a dark powder, the new crop of spores ready to be carried by wind, rain, insects, &c. to new plants, or to lie dormant till a fitting opportunity for germination presents itself. The concealment of the early growth of smut-fungi in their host-plant renders fruitless any attempt to reach them by fungicides. By the time spores appear there can be no cure, the crop is beyond recovery. Measures against smut-fungi must therefore be directed at killing the spores to prevent access of the fungus to crops liable to suffer. Hence the

necessity of treating seed in some way which will not harm it, but will kill the spores of fungi, as well as others. The more important methods of doing this are as follows:—

Sterilisation by hot water, or Jensen's method (see *Journal of the Royal Agricultural Society*, 1888, p. 397).—The object of this process is to subject the seed for a short time to the action of water hot enough to kill adhering fungus-spores, but not to injure the seed. This takes place with grain after five to fifteen minutes in water, about 130° to 134° Fahr.; with Beet-seed, after five minutes. The immersion is carried out by placing the seed in a vessel easily permeable by water; for example, a basket lined with coarse canvas. The hot water is best contained in two large vessels, the first with warm water, to wet the seed, and to prevent cooling of the water in the second vessel or boiler, which must be kept constantly between 130° and 134° Fahr.; a lower temperature will not ensure death of the spores, a higher may injure the seed. After a few minutes' immersion in the first boiler, the seed is placed in the second for at least five minutes, and frequently stirred. With dry seeds like Beet, it is recommended to soak them first in water for a few hours, and allow to stand till swollen; grain, however, does not require this. The seed after hot-water treatment is cooled in cold water, and spread out till dry enough to sow.

Sterilisation by Copper-sulphate.—The steeping mixture is a half per cent. solution of copper-sulphate in water, prepared by dissolving 1 lb. crushed commercial sulphate of copper (bluestone) in hot water, then adding it to 22 gallons of water. The seed is allowed to stand covered by this solution for a night, from twelve to sixteen hours; then take out and allow to drip till dry enough for sowing. The method may be improved on, if, without removing the seed, the copper liquor is run off, and the seed covered with milk-of-lime, prepared by shaking up 1 lb. of good fresh-slaked lime in each 4 gallons of water used; after stirring for five minutes, the lime liquor is run off and the grain spread out to dry.

Sterilisation by Potassium-sulphide.—The seed is left twenty-four hours in a half per cent. solution, prepared by dissolving 1 lb. of fused potassium-sulphide in 24 gallons of water. The seed is placed in a wooden vessel, covered with the solution, well mixed several times during the twenty-four hours steeping period, then spread out to dry for sowing. The powder advertised as "Ceres-powder" contains potassium-sulphide with other ingredients. It has been recommended for grain-smuts.

The success of these methods depends greatly on their general use throughout a whole district, and year after year. In addition to using steeping-mixtures, every precaution should be employed to destroy diseased plants, particularly in the case of smuts on garden or vegetable produce. It is believed that the use of fresh farmyard-manure containing smutted straw should be avoided, and that well-rotted manure is much safer.

Treatment of Rusts.—The rusts, or Uredineæ, as they are scientifically called, are amongst the commonest pests of cultivated crops, their rusty or brown colouring rendering them easily distinguishable amongst the green foliage. The remedy to keep them out of the garden has, however, yet to be discovered. No treatment we know of can be applied against them with much chance of success. We can only recom-

mend that plants likely to be attacked be cultivated in as healthy surroundings as possible, and that rust-proof varieties be selected for use. The ravages of the Hollyhock-rust are a case in point, no remedy ever seemed to affect it; and now we are only taking up this valuable decorative plant again after it had almost disappeared. The Carnation-rust threatens us now, and as yet the only remedy seems to be the drastic one of rooting-out and burning all infested plants. The agriculturist seems no better off with rust on Wheat. It is, therefore, to be sincerely hoped that those with opportunity of experimenting with Carnation, Plum, or other rust could get some reliable method of treating this annoying group of fungi. Bordeaux Mixture or potassium-sulphide has been recommended for various rusts, but results hardly justify the expense and labour of application. Where these fungicides are already in use they may check rusts, and it would be well to observe the results. The problem of combating rusts is complicated by the fact that many of them pass part of their existence on one host-plant, part on another. Thus, Wheat-rust inhabits at one time Wheat and many grasses, at another Barberry; a common Apple-tree-rust has a second stage on Juniper, and Pea-rust has a stage on Euphorbia. We cannot, however, say definitely whether the rust may not exist on one host-plant without the other; this is said to be the case with Wheat-rust. *William G. Smith, Edinburgh.*

(To be continued.)

CALCEOLARIA ALBA.

ONE of the most attractive exhibits at a recent meeting of the Royal Horticultural Society was constituted by some well-grown plants of this species shown by Mr. J. T. Bennett-Poë. The foliage is rather dense, the linear leaves being almost whorled, and the inflorescence terminal, much branched and many flowered. Each flower is snow white, or the white of the ripe Snowberry (*Symphoricarpos*). The plant is hardy in favourable localities, and is of a very decorative character, whether grown as a pot plant in a greenhouse or in beds. It is rarely seen now-a-days, though it was introduced from Chile to the Veitchian Nursery at Exeter, by William Lobb, so long ago as 1844. A coloured figure was given in the *Bot. Mag.*, t. 4157.

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 63 to 69.)

5, SOUTHERN COUNTIES.

(Continued from p. 122.)

BERKSHIRE.—I have scrutinised the crops more extensively this season than last. It has been a peculiar season; and, in regard to Apples, many of the trees, and even orchards, have about one-third of a crop. Two trees of the same variety will be growing side by side; one is bearing abundantly, and the other has none. Pears are mostly good upon wall-trees, and fair on standard-trees. Plums may be considered a general failure in this district, the early frosts having ruined the blooms, as they did those of the Cherry, and almost killing the small branches upon my trees. To finish off my survey, on the 20th ult. I visited the beautiful grounds and gardens of C. E. Keyser, Esq., Aldermaston Court, where Mr. Galt has been working out great improvements of late years. In regard to fruit there, the features are exactly as I have stated in the table. At the other extreme of my visiting Englefield House, the fine seat of R. Benyon, Esq., Mr. Coombes can boast of the best crop of Peaches, Plums, and Apricots, on the walls that I have seen. As a whole, this year's crops are the worst I have known for twenty-one years. *Robert Fenn, Sulhamstead.*

— Apples are the worst crop for many years, the depending upon a few never-failing varieties of the in class, viz., Keswick Codlin, Frogmore Prolific, King Castle, and Potts' Seedling; late-keeping ones will be very scarce indeed. The Pear trees good crops on walls, but with a few exceptions are a failure on trees in the open. Plums are scarce on walls as on orchard trees. Cherries, sweet and Morello, are an average crop on wall-

appointing, Plums more especially; for although these bloomed well, they failed to set, which may, I think, be partially attributed to the harsh winds and frosts prevailing whilst the trees were in bloom, and partially to the fact that owing to the wet, almost sunless autumn, the wood failed to ripen satisfactorily. To the part failure of the Apple crop this applies, I think, with still greater force. *W. Pope, Highclere Castle Gardens, Newbury.*

poorer crop, Glou. Morceau, Knight's Monarch, Thompson's, Beurré Rance, Beurré Diel, Seckle, Madame Treve being the only ones which are fairly cropped; and a few are to be found on trees of Marie Louise. Catillac has a good crop. The Plum crop is the worst we have had for some years, there were 10° of frost when the trees were in flower. The same cause ruined the Cherries. Figs on outside walls are a very good crop. Gooseberries, red and white Currants, and Strawberries were capital, and of the last, Royal Sovereign and Laxton's Latest-of-All, were very fine and good. *T. Denny, Down House Gardens, Blandford.*

HANTS.—The Apple crop, as a whole, is not an average crop; while such varieties as Mère de Ménage, Irish Peach, Worcester Pearmain, King of the Pippins, Lord Suffield, Warner's King, Cox's Orange Pippin, in one orchard are heavily laden, the same varieties, not 200 yards distant, are a failure. Caterpillars have not been so troublesome as in some past years. The crop of Plums on the wall trees is a fair one. Strawberries were good, but the season was short, Royal Sovereign being especially fine and good. *E. Molyneux, Swanmore Park, Bishop's Waltham.*

— The fruit crops in this district, taken as a whole, are under average, which I attribute mainly to the cold winds in the early spring, as the first indications were most favourable. Apples in general are much below the average, but there are individual exceptions; and the same holds good for the Pear crop. Plums are a failure. *J. Wasley, Sherfield Manor Gardens, Basingstoke.*

— Fruit here, on the whole, is very scarce, owing mostly to the late frosts in May, and the heavy rains when the Plums and Damsons were in bloom. Peaches and Nectarines have not set quite so well as usual. Blister has been very bad with me; all the first leaves had to be taken off, which gave the trees a severe check. I gathered the first Peaches (Waterloo) from open wall on July 10. The trees now are making good and clean growth. *Arthur Lee, Palace House Gardens, Beaulieu, Southampton.*

— The Apple trees are clean and healthy, but the fruit has dropped very badly, owing to the heat and drought. We have plenty of Pears, and the trees also have a healthy appearance; but the fruits, like those of the Apple, have dropped very much from standards, but not from trees on walls. Plums are a fair crop on wall trees in sheltered places. Gooseberries are hereabouts a thin crop, as are Raspberries, and the fruits are small for lack of moisture in the soil. The Damson trees carry a very heavy crop, and the trees are clean and healthy. *W. Smythe, Basing Park Gardens, Alton.*

— Although there was great promise of an abundant fruit harvest, we can scarcely term it an average one. Apples and Pears bloomed freely, but defective fertilisation caused most of the bloom to fall; in many instances the trees are quite barren. King of the Pippins, Deux Ans, Lane's Prince Albert, Cox's Pomona, Cellini, Barnack Beauty, and a few others are laden; whilst, of Pears, Marie Louise, Pitmaston Duchess, and Beurré Hardy, are amongst the best. Small fruits have been up to the average. Peaches and Nectarines outdoors are good, and trees healthy and clean. *A. Maxim, Heckfield Place Gardens.*

KENT.—During upwards of twenty years that I have been here, I do not remember having such bad crops of Apples, Pears, and Peaches as we have this year. All varieties bloomed well, and set fruit very thickly, but owing chiefly to continued cold east winds, and a few slight frosts when the fruits were about the size of Peas, they, in most cases, all ran off. Another effect of the cold was to be seen in the abundance of blister, which at one time seemed almost impossible to eradicate, but by continually pinching the diseased leaves off, they have made good wood since the weather has been more genial. Cherries have been as near a total failure as possible. Whereas the orchards on one farm near here were sold last year by auction for £1300, this year the highest bid was



FIG. 40.—CALCEOLARIA ALBA. (SEE P. 140).

but they are quite a failure on orchard standards, and Nectarine trees suffered much from the weather in the spring, and there are scarcely any sets. Small fruits were good, particularly black ants and Strawberries. Walnuts generally are failure. *T. Turton, Maiden Erlegh Gardens, Woking.*

— Fruit crops this year are, on the whole, dis-

DORSET.—Considering the wealth of blossom which showed on the Apple-trees, a good crop might have been anticipated; but, as a fact, few varieties have any. Striped Beefing, Irish Peach, and Yorkshire Greening are well cropped; whilst King of the Pippins, Keswick Codling, Beauty of Kent, Gravenstein, Lord Suffield, Duke of Devonshire, and Ribston Pippin have moderate crops. Pears are a still

£200. On the other hand, small fruits have been very plentiful, especially Strawberries and Gooseberries; but owing to the drought, the former fruit was soon over. Plums and Damsons are generally a very thin crop, although, where they have been washed to destroy the vermin that would eventually get on to the Hops, fairly good crops are to be found. Apples in some orchards are well cropped, especially the Codlin type. Kentish Cob-nuts abundant, and where washing was resorted to against the caterpillar, there are immense crops. *Geo. Woodward, Barham Court Gardens, Maidstone.*

— The fruit crops suffered very much from May frosts about the 12th, 13th, and 14th; on the 13th we had 5° of frost, which spoilt the best blooms of early Strawberries; the later varieties, however, have been very good. Other fruits dropped from the trees, viz., Apricots, Peaches, Plums, and Cherries. Some Apples are a good heavy crop, such as Blenheim Orange, Tower of Glamis, Stirling Castle, Duchess of Oldenburg, and King of Pippins; but, as a rule, the crop in this neighbourhood is poor. X.

— The fruit-crop in this district is one of the lightest we have seen for years. Cherries were nearly a total failure, and even the few there were were of poor quality. Pears are almost as bad. Apples are patchy. Taken as a whole, there is not half a crop; the quality, however, promises to be first-class. Strawberries have been a large crop of indifferent quality. Cob-nuts and Filberts so far are a record crop. If nothing goes amiss with them, they will be quite twice an ordinary yield. *Champion Bros., Borough and Covent Garden Markets, and Mereworth, Maidstone.*

— Apples, Pears and Plums are decidedly the poorest crop and quality of my eight years' acquaintance in the locality. It is partly due to spring frosts, but I think more so to last year's drought; as the bloom was small and extremely abundant. Aphis has been abundant on Apples. Out of several hundreds of varieties of the three fruits above-mentioned, there is not ten per cent. with fruit on. *Geo. Abbey, Junr., Avery Hill, Eltham, Kent.*

— All fruits blossomed well, but the continued E. and N.E. winds, with low night temperature, checked growth, and most of the fruits fell off. Locally there are a few Victoria Plums, but in this district there is no good crop except Cob-nuts and Filberts, which are the largest known, and the bunches are the biggest. *George Bunyard, Royal Nurseries, Maidstone.*

— Strawberries cropped heavily, and the fruits were of capital size and flavour. Peaches and Nectarines were fair, but the blister and continuous cold nights early in the season lessened the crop of fruits. Apricots, Morello Cherries, and Plums poor. Several of the free-bearing varieties of Apples and Pears are well cropped, and required thinning, but on the whole the crop is far from being a plentiful one. *H. Markham, Northdown, Margate.*

— The cold and perishing east winds in spring, in addition to severe frost in May, destroyed a most promising and abundant crop of Apples, Peaches, Apricots, and Plums. Strawberries have been a heavy crop of fine fruit, also Gooseberries, black and red Currants. Filberts, Cob and Walnuts are plentiful. *Geo. Hutt, Lullingstone Castle, Dartford.*

— In early spring fruit trees generally were looking very promising, and there was a fine show of blossom, but owing to the late frosts the crops will be anything but satisfactory. The hailstorm on June 6 did considerable damage in the immediate neighbourhood. *F. Moore, Blendon Park, Betchley.*

— All kinds of fruit trees blossomed abundantly, but there is only an average crop of Apples, owing to the cold north-east wind which was blowing during the time the flowers were expanded. Pears are a splendid crop on the walls and upon standards. Plums are good. All bush-fruits have been heavy crops, but individually small. Strawberries were good, but the season short. I have never seen such a crop of Nuts. *A. Wilson, Eridge Castle Gardens, Tunbridge Wells.*

(To be continued.)

AMERICAN NOTES.

PLUMS.

SEVERAL weeks ago attention was called in these columns to the marked tendency to include in American fruit-lists more and more varieties of native origin, and fewer and fewer of foreign birth. The course of events is especially interesting in the case of the Plums, in which the representatives of several species are competing for favour. Several varieties of Japanese Plums have been widely disseminated in quite recent years; but even now many of the best varieties of this class are American seedlings from the Japanese importations, as Hale, and Juicy. America is blessed, however, with several vigorous species of Plums, the potential good qualities of which are only beginning to be realised. The varieties introduced to cultivation have been mostly derived from *Prunus americana*, *P. angustifolia* (chicasa), and from the multifarious natural hybrids commonly passing under the name of *P. hortulana*. This last group, represented best by the well-known Wildgoose, has been peculiarly prolific of fine garden varieties, such as Whitaker, Milton, Miner, and Moreman. Meanwhile, introductions are made from *Prunus Watsoni*, a dwarf species from the Kansas sand plains; from *P. maritima*, the beach Plum; from *P. subcordata*, the Pacific coast Plum; while *P. rivularis*, *P. gracilis*, *P. grandulosa*, and other native species are being manipulated by many experienced plant-breeders, who permit us to be surprised at nothing in the way of strange results. Many strange and interesting hybrids have already been produced, and it seems altogether probable that the genealogies in our Plum-list will become rapidly complicated in the future.

The effect of these diverse introductions on the garden culture of Plums is decidedly good. It adds an interest to Plum-study which is of itself an object, aside from the production of fruit. It furnishes varieties adapted to all tastes, all soils, all climates, and all sites in a country where many diverse conditions are diversely severe. And we may still hope that the best results are yet to come.

American Dwarf Cherries.—In connection with the American Plums, the native dwarf Cherries ought also to be mentioned. Several varieties have been urged in the nurserymen's catalogues in recent years, and have enjoyed extensive experimental planting. Most of the named varieties have been seedlings of *Prunus Besseyi*, although the Utah hybrid is believed to be a cross between that species and *P. Watsoni*; and *P. pumila* has not been forgotten by the experimenters. But no variety yet introduced has shown any possibilities as a dessert-fruit, and the culinary value of some is still doubtful. Moreover, they are specially liable to disastrous attacks of the brown-rot fungus, which renders fruitage very uncertain.

"Principles of Fruit-growing."—Professor Bailey has issued another book. There is nothing unusual in this, nor yet in the fact that it is a good book. We have learned to expect one or two books a year from Professor Bailey besides his bulletins and other contributions to horticulture and botany. *The Principles of Fruit-growing* are here set down pretty much as the author teaches them to his students, and the volume is therefore something of a students' textbook. There is, however, nothing juvenile in its tone, or in the treatment of the topics, but such a statement of scientific principles and practical empiricisms as seems likely to interest and assist the unlettered grower of Grapes or Pears. While this volume has little or none of the scientific value of *Survival of the Unlike*, it is quite probable that it will find much wider circulation and more general appreciation among practical horticulturists.

Testing Varieties.—Anent the recent discussion of work for Chiswick Gardens, I note the emphasis laid on the comparative tests of varieties of fruits, vegetables, and flowers. This is a subject which has been very thoroughly threshed over in experiment stations circles in this country. In general, experience tends to discredit this class of work. There are a few places in America where varieties of certain groups are tested with ample results of value. The extensive fruit tests carried on by Mr. Beach at Geneva, N.Y., and by Mr. Craig at Ottawa, Ont., have been of great and undeniable good to planters; but the variety-testing, which has been a very large part in the scheme of horticultural work at many experiment stations has been an almost absolute waste of money. Those experiments which elucidate general principles of horticultural and agricultural practice seem to give the

most for the money spent. The magnificent done in spraying, and the control of plant well illustrates this. The extensive studies have been made at several stations upon hort and botanical classification have also helped our pomology and olericulture upon a scientific reasonable basis, and thus to give us so advancement with the world. *F. A. Waugh.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leic.

Figs.—The early house has probably finishing the second crop of fruits, and the treesh should be relieved of any small fruits remaining, the house be thrown wide open if the trees are pl borders, removing the lights if possible, so sure the wood being thoroughly ripened, and rested. If in pots or tubs, they should be to a sunny position out-of-doors, taking care not suffer from drought at the roots. If plunge the pots in some old leaves, and sh weather become very wet, slates or boards placed over the pots, to prevent the soil sodden through too much water. These apply to all orchard-house trees in pots t been moved out-of-doors. In later houses t will still be ripening. Ripening Figs ar injured by damp, therefore damp the h frequently; and if the weather be wet, caus heat to pass through the pipes, accom the circulation of a little air. Let the fr till thoroughly ripe, and should they ripen and it becomes absolutely necessary to gath they will keep longest on an inverted air-sie out any leaves, so that the air can circula amongst them. If the trees in the inter house are being pushed on to ripen the seed they will now be swelling up fast, and a given liberal supplies of warm manure-wate well syringed once a day, when the house which should be done early.

Pines.—If any Pines have to be repotted, should be taken in hand at once, and the arranged for the season. Take care to g sufficient root-room to carry the plants thr winter without becoming pot-bound; and v doubts exist as to the pots being large e enable them to do this, they should be s once, for if they get pot-bound, and a in that state, they will be sure to throw fruit prematurely, and thereby cause a seri in the succession. If the stock of plants is good strong suckers are available, the pre good time to put in a batch, as they will g rooted, and make good strong plants by s any are carrying ripe fruits, and the room i lift them out and place them in a cool vine; they will keep in good condition for some ti

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Mal.

Bedding Arrangements.—The plants in th flower-beds being now at their best, it will look over them with a view to deciding how the arrangements are worth repeating ano It is necessary that the requirements for should be estimated now to enable the prop sufficient plants of a certain variety, and t any waste of time over plants that eventua not be used. The hot weather has favoured jects as Pelargoniums, Zinnias, Petunias, and num. Verbenas are also gay, while Calceo Begonias, where circumstances have not the application of water *ad libitum*, are instances suffering badly. One of the sim prettiest mixtures here this season in a pa consists of the old variegated Pelargonium and the dark blue Viola, Archie Grant. T were planted out early in spring, and thoroughly established before summer set Pelargoniums being dotted over the bed la latter are allowed to retain their small flowers, and both subjects are blooming although little water has been applied; Violas have not been allowed to seed.

Chrysanthemums in beds and borders will n at the roots to preserve the foliage in a s condition. The early-flowering Madame C. I G. Wernig, and similar varieties in beds, given an occasional soaking of liquid manure

Erythrina crista-galli.—The present beauty of this half-hardy herbaceous plant suggests a note in reference to its adaptability for the borders in a position where the roots may be slightly protected during the winter if needed. Any sheltered spot, such as afforded near the base of a south wall, for preference that of a stove or greenhouse, will answer admirably. When planted in such a position in southern counties, very little protection is needed for the stools, except in severe winters, when a covering of bracken, coal-ashes, or cocoa-fibre is necessary. A large specimen in these gardens has been so treated for many years, and annually forms a most interesting feature. Many of the growths on this old-established specimen attain to a height of 7 feet, the upper half being well covered with their handsome coral-red blossoms. The principal requirements towards free growth are perfect drainage, with a fair depth of good loamy soil. Propagation may be carried out by dividing the crowns in the spring when just starting into growth, or from seeds, which may be sown at the present time, in pans containing light soil. Place them in a close frame, and grow them on in a warm house through the winter, for planting out next summer.

General Work.—Should the present showery weather continue, prick off Wallflowers, *Myosotis*, and other spring bedding plants. Divide and transplant *Heuchera sanguinea*, *Hesperis matronalis albus plenius*, *Verbascum Chalcidii*, and such plants that have flowered and are possible of increase by division.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Barford, Dorking.

Dendrobiums.—Some of the deciduous and semi-deciduous *Dendrobiums* are about completing their growth. When the new bulbs are quite made up, it will be necessary to remove the plants to a cooler and drier atmosphere, and full sunshine. This change, however, should be effected gradually, because, just when the bulbs are finishing many of the old roots are growing, and emitting lateral rootlets. It is principally through them that the plants gain sufficient strength to flower. When the terminal leaf at the extremity of the bulb is complete, select a position at one end of the growing-house, and place there such plants as are in this condition, and for a week or ten days expose them to more light and air, and at the same time gradually lessen the amount of water at the root. After this time the plants may be taken to a cool greenhouse or vinery from which the Grapes have just been gathered, taking care to place them out of the line of draughts. The vinery is perhaps the best place for them, as there the plants gradually pass from moderate shade into full sunshine. When thus exposed, the leaves soon turn yellow, and if allowed to remain untouched, they will in time fall away naturally. The water given the plants at the roots should be reduced by degrees until after the leaves have fallen. In watering plants at such a stage, the inexperienced should not depend entirely upon the appearance of the compost, because, being exposed to strong sunshine, the surface of the soil quickly becomes crisp and dry, while underneath the roots may be saturated. A sound practice is to carefully examine the plants every day, and immediately the newly-made bulbs show the least signs of shrivelling, then give the plants a thorough watering. It seldom happens that all of the plants are ready for removal at the same time, therefore, when the earliest are taken out, others will be ready to take their place. Such practice enables the grower to gradually mature his plants, and they will be less liable to injury when exposed to full sunshine in the resting-house. Up to the present we have removed the earliest of the following well-known varieties:—*D. Wardianum*, *D. crassinode*, *D. nobile*, *D. Ainsworthii* × *D. splendensimum grandiflorum* × *D. crystallinum*, *D. lituiflorum*, *D. Pierardi*, *D. aspasia* × *D. Juno* × *D. Domini* × *D. Linavianum*, *D. eucosmum leucopteryum* × *D. Cassiope* ×, and several of the melanodiscus and chrysodiscus hybrids. There are still many plants of the deciduous section that are in the middle of their growing season, as *D. anosmum*, *D. Parishii*, *D. superbum* (macrophyllum), *D. albo-sanguineum*, *D. primulinum*, *D. Boxallii*, *D. cretaceum*, *D. crepidatum*, *D. tortile*, *D. Hildebrandtii*, &c. These must be given liberal treatment both at the root and in the atmosphere, until growth is completed. The same remarks apply also to the taller-growing species, as *D. Dalhousieanum*, *D. moschatum*, *D. binoculare*, *D. fimbriatum*, *D. Paxtonii*, *D. calceolus*, and *D. clavatum*. Some of the evergreen section, as *D. thyrsoiflorum*, *D. densiflorum*, *D. Schroderae*, *D. Farmeri*, *D. Guibertianum*, *D. Grif-*

fithianum, *D. suavisimum*, and *D. chrysotoxum* have made their growth, but it is not advisable to remove them just yet. Like *D. Wardianum*, these plants are liable to start secondary growths; but, if possible, they should be prevented from doing so, as one set of growths each year is all that is necessary to the well-being of the plant. In order to prevent its occurrence, place the plants, immediately the growths are made and the leaves fully expanded, into a warm, light position in the Cattleya-house. Water the plants with discretion, or the foliage will become spotted and unsightly. When the growths are matured and the leaves have attained their proper green colour, then the plants may be removed to a somewhat lower and drier atmosphere. Such distinct species as *D. Dearei*, *D. sanguinolentum*, *D. Huttoni*, *D. subclausum*, *D. glomeratum*, *D. triadenium*, and *D. O'Brienianum* are still making their growths, and appear to thrive best when suspended on the shady side of the warmest house.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Lifting and Storing Early and Second Early Potatoes.—The frequent thunder-showers of the last week or two are producing the usual effect upon Potato crops that may have finished, or nearly finished, their growth, and disease is setting in apace. Lifting should be followed up persistently at every favourable opportunity. Fine weather is indispensable for this, as the tubers need to be thoroughly dry before storing. When taken under cover they must be stored thinly for a week or two, and again sorted before finally storing in bulk. Seed required for another season's planting should be gathered up and stored separately, as some amount of air and light will benefit these rather than otherwise. Inferior varieties should be carefully noted, that they may be discarded in favour of good ones, of which there is now no lack. Some will suit certain localities and soil better than others. Late varieties are still growing strongly, and as long as strong growth continues the fungus spores will have but little effect upon them. Such varieties as *Magnum Bonum*, *Chancellor*, &c., are practically disease-proof, but all are best lifted as soon as the skins are set.

Cauliflowers.—Where an autumn-sowing of Cauliflowers is practised, the work should be done as soon as possible, selecting a warm corner, or a site under a south wall, for the purpose, and sow thinly in shallow drills. A slight dressing of superphosphate of lime, or dissolved bone, will assist germination, and help the plant through the earliest stage. As soon as large enough, prick the seedlings off singly into small pots, or into a frame where they may be afforded some protection through the winter. Coddling must always be avoided by affording plenty of air at every opportunity. Early London, Walcheren, and Veitch's Autumn Giant are good varieties for present sowing. Owing, however, to the now general practice of early spring sowing and forwarding the young plants under glass, autumn sowings have fallen greatly into disuse.

Old Cabbage Beds.—Beds of Cabbage that have yielded produce during spring and summer should be cleared off the ground, unless the supply of Savoy and other early winter produce is likely to be deficient, in which case the dead leaves, &c., should be cleared away, and a good soaking of liquid-manure afforded, the ground being afterwards hoed through deeply. A good supply of tender produce equal to young plants may thus be obtained. The plants from the first sowing of *Ellam's Early*, &c., should now be large enough to plant out from the seed-bed, and if too early for spring, will be certainly appreciated in November and December. Plant Coleworts also in quantity.

Winter Radishes.—Make a good sowing in firm ground that is not too rich. Sow the seed very thinly in shallow drills, 8 or 9 inches apart in an open sunny situation. China Rose is much the best variety for present sowing, being equally hardy with the black Spanish, and much more crisp and tender. The seed must be protected from birds.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoo Park, Luton.

Bulbs for Spring-flowering.—These should be potted at intervals of three weeks to form a succession of bloom. The majority of Narcissus and Daffodils will succeed best if potted-up at once. Mix a good quantity of loam that has been stacked for a few

months, with a liberal quantity of well-decayed leaf-mould and sand. Place this in a cool, dry shed, and it will make excellent potting-material for successional batches. The pots must be clean, and well drained with small crocks. Roman Hyacinths, Jonquilla, Paper-white Narcissus, Early Duc Van Thol and other Tulips, should receive first attention, to be followed with a good selection of named Hyacinths, Daffodils, Crocuses, Scillas, Iris, Snowdrops, and others. If large quantities of cut blooms are required for house and table decorations, and there are limited means of production, it will be well to use ordinary-sized cutting-boxes for some of the Narcissus and Tulips. Treated in the same way as those pots, they will yield large quantities of flower for cutting, and those grown in pots may be used for decorative purposes. When the bulbs have been potted, plunge them in a bed of coal-ashes, and protect them from heavy rains. They must not be allowed to remain in the ashes too long, and an examination should be made occasionally to ascertain whether they have commenced to push. Those bulbs ready for removal should be placed in a cool house or frame, and gradually inured to the light.

Freessias.—Those potted in July should be removed from the plunging material to a position on a shelf near the glass in a cool house. Afford support with neat stakes before the growth gets too long. Pot on successional batches, plunging the pots just over the rims only.

General Work.—Plants of *Hydrangea Hortensia* now past their best should be plunged in a suitable position out-of-doors, but some of the oldest pieces that have grown unsightly may be cast away or planted out-of-doors in a sunny spot in the pleasure-ground. Spring-struck cuttings may be potted on in good strong loam. These will make useful flowering plants next season. Tuberosees that are throwing up flower spikes should be removed to a warm house, where they may be fed well with manure-water; rub off all side shoots, and protect successional batches from heavy rains by placing the glass-lights over them. Those not yet showing flower should still be kept rather dry at the roots.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Alpine Strawberries.—The present is a good time to plant strong-rooted runners of the Alpine (*Quatre Saisons*) Strawberry. Plant them in rows 1 foot apart and 6 inches from plant to plant, in ground which has had a dressing of manure dug into it recently. Make the soil firm about the roots when planting, and water in the absence of rain to settle the soil. *La Genereuse* (large red Alpine) is the best variety to grow. A border in front of a wall having an east aspect is best suited to the culture of the Alpine, because ripe fruits of this variety are not required until the summer Strawberries are past. The size and quality of the fruits depend in a great measure upon the treatment accorded to the plants, which will flourish in any kind of soil of fair depth and average fertility. In order to secure large clean fruits, place some flints closely together on the soil between the plants. These will not only preserve a more uniform degree of moisture in the soil about the roots than would otherwise be the case, but will prevent the ripe fruit coming in contact with the soil. The first, and sometimes the second flowers that the plants produce should be removed, inasmuch as they are not required until August, and if allowed to fruit early, they will the sooner cease to bear. There is a pleasant acidity in the flavour of the Alpine Strawberry which is pleasing. During autumn good dishes of it and the autumn-bearing Raspberry (*Belle de Fontenay*) are much appreciated, not only by the consumers but also by the gardener, who is responsible for a good dessert being placed on his employer's table.

Royal Hautboys.—This old variety is now seldom met with. It is quite distinct in both foliage and fruit from any and every other variety of the Strawberry in cultivation, and the fruit, owing to its peculiar flavour, is much prized by some persons. Rooted runners, if planted now in good soil, in rows 20 inches asunder, and at the same distance in the rows, making the soil firm about each plant, will yield a fair crop of its purplish-red coloured fruit. One or two rows, according to length of rows, will suffice if planted only with a view to placing on the dessert table a Strawberry quite distinct in shape, colour, flavour, and aroma from any other Strawberry. The number of plants grown can easily be increased if necessary.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR SEPTEMBER.

WEDNESDAY, SEPT. 1	Reading Horticultural Society's Show. Glasgow and West of Scotland Horticultural Society's Show (two days). Horticultural Show at Bath (two days).
THURSDAY, SEPT. 2	Ayrshire Gardeners' Society's Meeting.
FRIDAY, SEPT. 3	National Dahlia Society's Show at Crystal Palace.
SATURDAY, SEPT. 4	Société Française d'Horticulture of London, Meeting. Isle of Wight Horticultural Improvement Society's Meeting.
TUESDAY, SEPT. 7	Royal Hort. Soc. Coms. Early Show of the National Chrysanthemum Society (three days).
WEDNESDAY, SEPT. 8	Royal Caledonian Horticultural Society's Show (two days).
TUESDAY, SEPT. 21	Royal Horticultural Soc. Coms.
THURSDAY, SEPT. 30	Royal Horticultural Society's Fruit Show, at Crystal Palace.

SALES FOR THE ENSUING WEEK.

MONDAY, AUG. 30	Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs, &c., at Mr. Stevens' Rooms.
TUESDAY, AUG. 31	Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY, SEPT. 1	Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs, &c., at Mr. Stevens' Rooms.
THURSDAY, SEPT. 2	Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs, &c., at Mr. Stevens' Rooms.
FRIDAY, SEPT. 3	Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chislewick.—59° 9'.

ACTUAL TEMPERATURES:—

LONDON.—August 25 (Noon): Max., 66°; Min., 53°.
PROVINCES.—August 25: Max., 73°, at The Skaw;
Min., 57°, at Aberdeen.

Plums.

It was upon these popular fruits that Mr. A. H. PEARSON, of the Chilwell Nurseries, Nottingham, so admirably and exhaustively, as well as pleasingly, dilated at the Drill Hall meeting of the Royal Horticultural Society on Tuesday last, and to which so comparatively a small body of auditors listened. Mr. PEARSON's paper covered the subject of "Plums, and their Culture," so tersely and so aptly, that no one who gardens could have failed to find in it food for reflection. The lecturer not only greatly interested his audience, but provoked an interesting discussion, which helped to evoke yet farther valuable information. Residing and practising in the Midlands, Mr. PEARSON's experience may not, in every case, coincide with that of more southern Plum-growers; but all the same, he left little room for cavil.

A very important feature in the lecture was found in full reference, not only to means of propagation, budding being, of course, the chief one, but to stocks. As it was shown, so diverse are the characters or habits of Plums,

that some do best on the Mussell, or on the Brussels, or on the Mirabelle, as the case may be, and many had been the mistakes in the past, leading to premature death, or even to stragulation, arising from the putting good varieties on to the wrong stocks. Specially was it lamented, and the chairman, Mr. G. BUNYARD, coincided, that there was no dwarfing stock for the Plum, as was the case with the Apple and Pear, although that defect is somewhat mitigated by the fact that Plums as a rule are not such strong growers as are the fruits named. As bearing on this question, Mr. HAMMOND, a well-known Kentish grower, said that the half-standard form of tree was best for market-planting, as it soonest became fruitful, and was dwarfer than tall-worked standards, and early fruiting soon checked strong wood-development.

With respect to wall-trees, Mr. PEARSON deprecated the planting of common sorts like Victoria against south walls, where Plums of greater excellence should find a place, leaving cooler aspects for the Victoria and similar cooking varieties. He also advocated the method of horizontal training like that usually applied to Pears on walls, as "checking sap-flow" and promoting fruitfulness over a greater area. Mr. A. DEAN, however, contested this point on the ground that our finest stone-fruits always crop best on fan-shaped trees, whilst horizontally-trained Pears were not always cropping successes. Beyond which, there is the objection that gumming, is a too common complaint with Plums, causing branches to die. The loss of a branch on a horizontally-trained tree would involve a big gap, whilst in a fan-shaped tree new branches soon fill the void. With respect to the common expression by gardeners, "checking sap-flow," it is advisable that those employing this now hackneyed expression should have the fullest knowledge of what is involved in it. As commonly used among gardeners, it conveys a wrong idea as to the movements of the fluids in plants, but it is the phrase, not the facts, that may be objected to. Whilst physiologists now know for certain that the old notion of up-and-down sap-currents requires much modification, they have not as yet devised a clear explanation of the facts that undoubtedly do present themselves.

A wide list of varieties of Plums for various forms of culture was given, and those anxious for further information will find it all in a future issue of the Royal Horticultural Society's Journal. The lecturer ventured to express a belief that one reason for the complaints with respect to Plum gluts occasionally experienced, was due to the too liberal planting of the popular Victoria, and to the comparative neglect of other valuable varieties. That was, to employ a well-known simile, "putting too many eggs into one basket." He advised the growing of such early and late varieties as Czar, Monarch, &c., that the ripe season might be spread over a longer period, when better prices would be obtained. This view was generally held by Mr. HAMMOND, whose market experience is of the highest, but who all the same said, that in such markets as Spitalfields and the Borough, which were really the people's markets, it seemed impossible to have too many Victorias, for this Plum would sell in preference to other varieties, so popular is it. Possibly Mr. HAMMOND grows finer samples, and markets them more carefully, than do those who complain of gluts and low prices; indeed, we have great sympathy with Mr. PEARSON's dictum,

that good fruit always commands a good price. Naturally, the lecturer laid great stress on the importance of utilising surplus Plums for the making of jam, as this is not only a delicious fruit-compound, but it keeps well. But to make this practice at all profitable, it is needful to have the jam factory close at hand. In this way, the defects of one season are covered by the abundance of another. The preserving of Plums whole in bottles, though one of exceeding importance, escaped attention through want of time, and so far as concerns Plum-drying on the French system, our uncertain climate seems to fail to produce suitable fruit, or we do not grow the proper varieties. As to sending Plums to the dessert table the preservation of the "bloom" on the fruit was strongly advised, as when so preserved the fruits are not only much more beautiful, but are far more tempting, because they show that the fruits have had a minimum of handling. Arising from this matter it is difficult to avoid reference here to the general habit of placing these fruits in the shop windows in tempting condition, in boxes, practised by the French, and which we seem too obstinate to copy, yet that very tastefulness in packing for shop-sale means enhanced value to the fruits. Some shallow boxes of splendid Plums from Sawbridgeworth were shown in the hall, lined simply with common tissue paper. How much in this case would the French lace-paper have enhanced their beauty. The more the subject of Plums is considered the more illimitable the scope of it seems to be, and we join heartily with the audience of Tuesday last in awarding to Mr. PEARSON hearty thanks for his admirable discourse.

THESE gardens will probably soon cease to exist. During the past few months the affairs of the Society have been allowed to drift into a deplorable state. This has been followed by the discharge of nearly all the gardeners, the dismissal of the Curator, and finally the sale of the whole of the plants in the houses. All these retrogressive movements are alleged to be in opposition to the majority of shareholders of the gardens; those who are responsible for the breaking-up policy being a few individuals who are in possession of a large number of shares, having purchased them with no view to retaining the gardens as gardens, but as a speculation. It was at one time thought that the Sheffield Gardens would have passed into the hands of the Town Trustees, and have been put to better use than they ever were before, as, after passing into the hands of that body, they would have been public property, and open to the people of Sheffield for ever. The committee formed for preserving the gardens approached the Town Trustees, who promised to give £5000 towards buying up the whole of the shares at par value, which is £5 per share, providing the Preservation Committee could raise by subscription or gift of shares an additional £4000, the two sums being sufficient to purchase the 1800 shares at par value. This amount was raised, and at two meetings of the shareholders it was, we are informed, passed unanimously that the Society be dissolved, and passed over to the Town Trustees, on the understanding that that body would pay par value for the shares, viz., £9000. This would have passed, but for the Garden Committee raising an objection as to the legality of the proceedings, and now the



FIG. 41.—GRAMMATOPHYLLUM SPECIOSUM: SPIKE 7 FEET HIGH; FLOWERS 5 INCHES ACROSS. (SEE PP. 146, 150.)

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- * JOHN DODGE, DEAN OF ST. PAUL, 1621-31, by Dr. Jessop. 1
- * DRAKE AND THE TUDOR NAVY, by Julian S. Corbett. 2
- * LETTERS OF MARY SHOOTER HOLLAND. Vol. 1.
- * THE GIRLHOOD OF MARY JOSEPH HOLLAND, 1776-1796. 1
- * LIFE OF ANDREW HOLLAND. 1

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangements.

APPOINTMENTS FOR SEPTEMBER.

WEDNESDAY, SEPT. 1	Reading Horticultural Society's Show. Glasgow and West of Scotland Horticultural Society's show (two days). Horticultural Show at Bath (two days).
THURSDAY, SEPT. 2	Ayrshire Gardeners' Society's Meeting.
FRIDAY, SEPT. 3	National Dahlia Society's Show at Crystal Palace.
SATURDAY, SEPT. 4	Société Française d'Horticulture of London, Meeting. Isle of Wight Horticultural Improvement Society's Meeting.
TUESDAY, SEPT. 7	Royal Hort. Soc. Coms. Early Show of the National Chrysanthemum Society (three days).
WEDNESDAY, SEPT. 8	Royal Caledonian Horticultural Society's Show (two days).
TUESDAY, SEPT. 21	Royal Horticultural Soc. Coms.
THURSDAY, SEPT. 30	Royal Horticultural Society's Fruit Show, at Crystal Palace.

SALES FOR THE ENSUING WEEK.

MONDAY, AUG. 30	Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs, &c., at Mr. Stevens' Rooms.
TUESDAY, AUG. 31	Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY SEPT. 1	Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs, &c., at Mr. Stevens' Rooms.
THURSDAY, SEPT. 2	Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs, &c., at Mr. Stevens' Rooms.
FRIDAY, SEPT. 3	Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURES for the ensuing week, deduced from Observations of Forty-three years, at Chislewick.—59° 9°.

ACTUAL TEMPERATURES:—

LONDON.—August 26 (Noon): Max., 66°; Min., 53°.
PROVINCES.—August 25: Max., 73°, at The Skaw; Min., 57°, at Aberdeen.

Plums.

It was upon these popular fruits that Mr. A. H. PEARSON, of the Chilwell Nurseries, Nottingham, so admirably and exhaustively, as well as pleasingly, dilated at the Drill Hall meeting of the Royal Horticultural Society on Tuesday last, and to which so comparatively a small body of auditors listened. Mr. PEARSON's paper covered the subject of "Plums, and their Culture," so tersely and so aptly, that no one who gardens could have failed to find in it food for reflection. The lecturer not only greatly interested his audience, but provoked an interesting discussion, which helped to evoke yet farther valuable information. Residing and practising in the Midlands, Mr. PEARSON's experience may not, in every case, coincide with that of more southern Plum-growers; but all the same, he left little room for cavil.

A very important feature in the lecture was found in full reference, not only to means of propagation, budding being, of course, the chief one, but to stocks. As it was shown, so diverse are the characters or habits of Plums,

that some do best on the Mussell, or on the Brussels, or on the Mirabelle, as the case may be, and many had been the mistakes in the past, leading to premature death, or even to strangulation, arising from the wrong stock varieties.

that good fruit always commands a good price. Naturally, the lecturer laid great stress on the importance of utilising surplus Plums for the making of jam, as this is not only a delicious fruit-compound, but it keeps well.

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kets, it seemed impossible to have too many Victorias, for this Plum would sell in preference to other varieties, so popular is it. Possibly Mr. HAMMOND grows finer samples, and markets them more carefully, than do those who complain of gluts and low prices; indeed, we have great sympathy with Mr. PEARSON's dictum,

informed, passed unanimously that the Society be dissolved, and passed over to the Town Trustees, on the understanding that that body would pay par value for the shares, viz., £9000. This would have passed, but for the Garden Committee raising an objection as to the legality of the proceedings, and now the

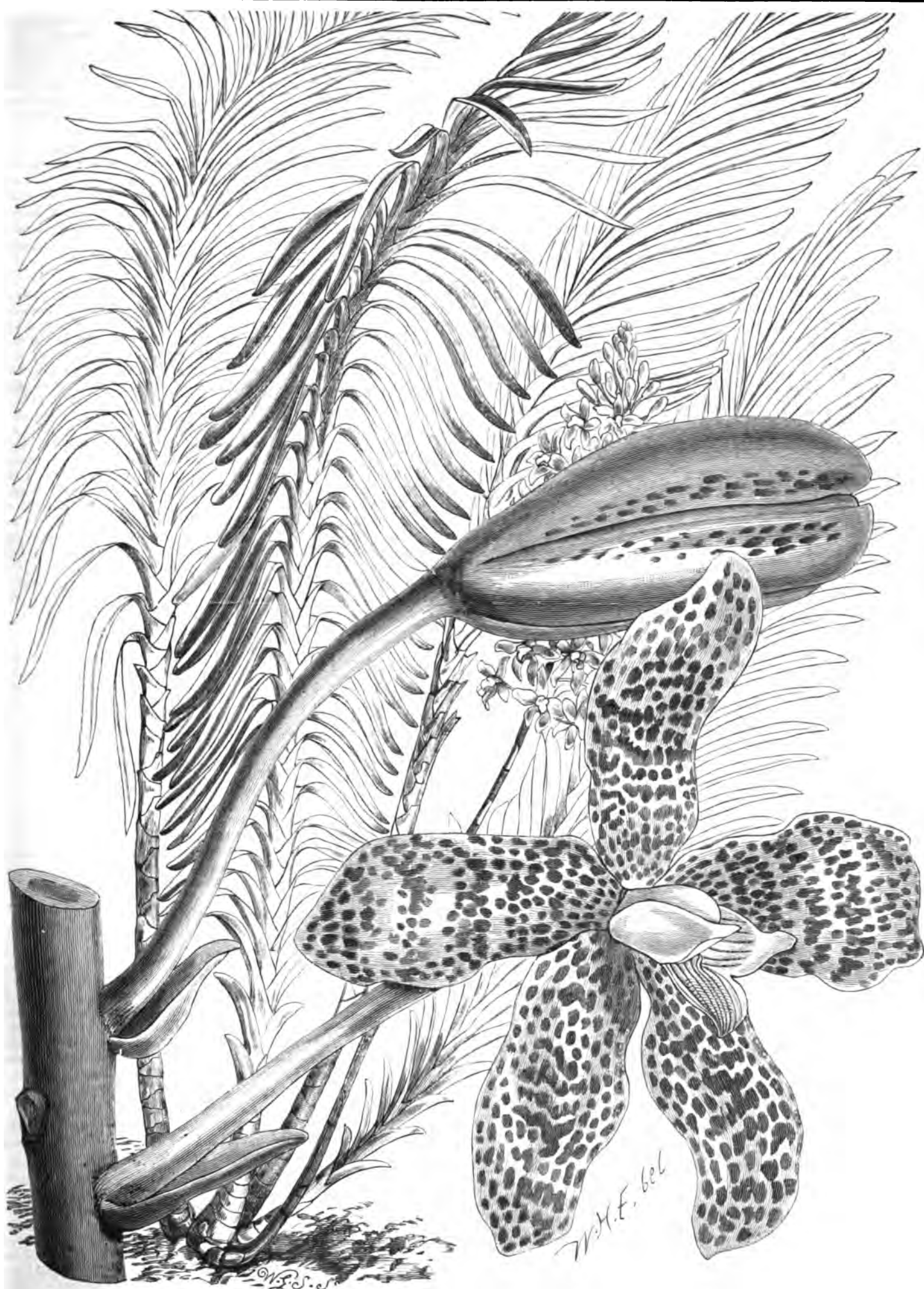


FIG. 41.—GRAMMATOPHYLLUM SPECIOSUM: SPIKE 7 FEET HIGH; FLOWERS 5 INCHES ACROSS. (SEE PP. 146, 150.)

affairs of this Society, the gardens of which were opened in 1896, stand in a most awkward position.

Edenical gardens formed by societies in the provinces have oftentimes a difficult matter to keep afloat, and have to resort to various ways of raising finances to carry them on, which are in too many cases far from what one looks for in such institutions. The Sheffield Gardens were, we are told, only in debt at the end of their financial year to the amount of £22, so that cannot be framed as an excuse for breaking them up. The houses in these gardens were a great attraction to the Sheffield public, and now that the contents have been disposed of, it is a question if the gardens are worth retaining, as there are two parks belonging to the town at no great distance from the botanical gardens. These gardens are a little more than 1½ acres in extent, and were laid out by the late ROBERT MARXCOCK, who, at the time, was Curator of them; they include a magnificent range of conservatories 340 feet in length, which is divided into eight compartments, the Palm-house occupying the centre. At the back of this range are the pits and frames, and seven other houses for cool and warm-house plants.

The Co-operative Festival.

THE National Co-operative Festival has once more been held with its exhibition of productive and distributing agencies, and its flower show, and judging from the extent of its industrial display, and the dimensions of its illustrations of farm and garden produce, it is yet in the full vigour of its operations. It needs such a building as the Crystal Palace, with its spacious grounds, to afford ample accommodation for these: for its conferences and meetings, its social gatherings, its choir competitions and sports, and its concert of some seven thousand voices, and the company of from 40,000 to 50,000 persons who usually attend it. On this occasion, the flower show had to be located in a huge tent erected on the terrace—600 feet in length by 40 feet in width—and in which the produce was seen to much better advantage than in the Palace, where the height and dimensions of the building dwarf plants and flowers out of all proportions. During the last few years it has been found necessary to divide the competition. The flowers, &c., furnished by the members and customers of the Agricultural and Horticultural Association compete on the Friday, the contributions to some 120 classes being judged on that day; and on the following day the same number of classes is much more numerously filled by contributions from the members of industrial co-operative societies, some of whom bring their produce from Scotland. This class of exhibitor, among which is to be found many enthusiastic and successful amateur gardeners, forms sixty-eight per cent. of the competition. In this section there was staged in the various classes twenty-nine complete collections of vegetables, comprising 174 dishes. One of these collections came from Scotland, two from the Midlands, three from the west, five from the north-west, eight from London and its suburbs, and ten from the South of England. By an equitable arrangement, the exhibitors in these several districts competed together, as it would be manifestly unfair to pit produce grown in colder districts of the north-west with that produced in the warmer south.

While plants and flowers are largely represented, the bulk of the garden produce is vegetables. These can be packed and conveyed to

London with much greater convenience and safety than plants and flowers; and of vegetables there were in the industrial section over 1000 entries. Most prominent were Potatoes, the beauty of many of the tubers recalling the Potato exhibitions held at the Crystal Palace a few years ago. Next came Beans, represented by 135 dishes. Turnips, Peas, Onions, &c., were also very numerous. The two weak points in the vegetable classes were Turnips and Cabbages, though some very good examples of each were shown; others—as an incidence of the season more than from any other cause—were rough and ill-shapen. The judges found it no easy task to select the four best out of, say, fifty dishes of white Kidney Potatoes, or the same number of Peas.

Every year the standard of quality rises to a higher level, so quickly have the exhibitors realised the preferences of the judges for those qualities which make for excellence that inferior exhibits are now few, and they come mainly from those who are competing for the first time.

In the cut-flower classes may be found the representatives of almost every flower that blooms in August. Dahlias were most numerous shown, especially the Cactus and Pompon varieties; the former especially would have done no discredit to the Exhibition of the National Dahlia Society. Asters and Marigolds were numerous also. There were many more Roses than might have been expected. Fragrant Sweet Peas were abundant, and Asters of all types. Many specimen-plants, showing successful culture, were staged; Ferns of tender character, Coleus, Fuchsias, Harrison's Musk, of which there were some excellent examples; *Lilium speciosum*, &c. It is quite certain that the range of choice of gardener-co-operator is large, and he is by no means slow to learn the value of high qualities in the strains he loves to cultivate.

The higher qualities of fruit came, of course, from the gardeners of members, and there were some very good collections. It is matter for great regret that one exhibitor deliberately endeavoured to mislead the judges by tying together fragments of bunches of Grapes to form a large one. Happily the attempt was discovered, and it is to be hoped the exhibitor is by this time heartily ashamed of himself.

One specially interesting feature was an exhibition of photographs of "Gardens of Taste," promoted by the Agricultural and Horticultural Association, and which was arranged in the Italian Court. Many of these were delightful, not only in the charming features they represented, but in the clearness and vividness of the pictures. In this same court was an exhibition of pot-plants grown in pure sand, having the aid only of pure chemical manures. There were five sets of plants, each grown in a different way—without manure, with manure from which nitrogen is absent, with manure minus phosphate, with manure without potash, and with the Association's manure, containing all these elements. In the latter case, perfect crops were found produced in the most sterile sand. These experiments appeared to have a great interest for the exhibitors, and in all probability supplied suggestions by which many cottage gardeners can overcome the difficulties experienced in many parts in obtaining suitable manures for their plots, and especially so in parts where but little of ordinary farmyard or stable manure is made. We have seen allotment gardens literally starved for want of adequate supplies of fertilizers.

Mr. E. O. GREENING, the indefatigable

director of the Festival, made a departure on this occasion, which was welcomed. On the afternoon of Friday he organised a meeting in one of the large dining-rooms for the purpose of a social gathering, at which Mr. J. WRIGHT, Mr. R. DEAN, and others of the judges delivered addresses on some topic related to the flower show. But this was but one of other gatherings, social and otherwise, which extended over the five days of the festival. It may be added that all the officials of the Palace write in expressions of warm praise of the conduct of the visitors, who appear to take the Festival seriously, and make it in the cases of many their annual visit to the south a time of calm, dignified, but thorough enjoyment.

GRAMMATOPHYLLUM SPECIOSUM.—The event of the week, horticulturally considered, has been the exhibition of a noble spike of this Orchid by Sir TREVOR LAWRENCE. An idea of it can be gleaned from our figure, repeated from a former volume. At the bottom of the spike in Sir TREVOR LAWRENCE's plant were two abnormal flowers, one of which is figured in fig. 41, p. 145. This flower had four nearly equal segments in two rows—no true lip and a straight column—a very common state of things among Orchids, and interesting as showing the probable derivation of the ordinary irregular Orchid-flower from a regular type. The plant is recorded to have flowered first in 1851 in Loddiges' nursery at Hackney, while a much finer specimen appeared in 1859 in the garden of W. G. FARMER, Esq., Nonsuch Park, Ewell, and subsequently another was flowered by Mr. SCOTT, gr. to Sir G. STAUNTON, Leigh Park. Mr. CURTIS, of Penang, a few years since sent us a photograph of a magnificent plant of this species of dimensions that we hesitate to cite. Unfortunately the photograph was unsuitable for reproduction. Another fine but much smaller specimen was imported by Messrs. SANDER & Co. of St. Albans. We gave a figure of the extraordinary snake-like pseudo-bulbs denuded of leaves, and with its curious ascending roots, at the back page of the index for vol. xiii., 1893. This specimen was presented to the Royal Gardens, Kew, by Messrs. SANDER, and forms now one of the most striking objects in the Victoria house. The roots have access to the water, and the plant is in vigorous health, and will no doubt flower in another season. The plant is a native of Java and other islands of the Indian Archipelago. The prevailing colour of the flower is dull yellow thickly dotted with reddish-purple spots. The pseudo-bulbs attain a height of 9 to 10 feet, and the flower-scape measures 6 feet and upwards in height. The flowers measure 5 to 6 inches across.

THE WOLVERHAMPTON CHRYSANTHEMUM SOCIETY.—At a recent meeting of this Society the present Chairman, Mr. G. A. BISHOP, tendered his resignation, owing to his retirement from the gardens at Wightwick Manor. The resignation was accepted with regret. Various members, including the vice-chairman, Mr. G. Bradley, Mr. R. Lowe, Mr. J. E. Knight, Mr. Simpson (Chairman of the Horticultural Club), and others, spoke to services rendered to the Society by Mr. BISHOP, and expressed their sense of the loss the Society must sustain. It is proposed to present Mr. BISHOP with a testimonial.

THE ANNUAL "OUTING" of the employees of Messrs. JOHN LAING & SONS, Forest Hill, took place on the 20th inst. About eighty persons journeyed to Eastbourne, accompanied by the heads of the firm, and an enjoyable day was spent.

NOTES FROM THE ISLE OF WIGHT.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Ventnor on August 7. Dr. J. GROVES presided over a fairly good audience. Mr. C. ORCHARD, Bembridge, read a paper on "The Progress of Horticulture in England during Her Majesty's reign." Mr. W. W. SKEATH of Macer, Ventnor, obtained the Association Certificate

for a group of flowering and foliage plants effectively arranged.

The Shanklin Horticultural Society held their eighteenth summer show in Rylstone Grounds by permission of M. SPARTALI, Esq., on August 18. The quantity and quality of exhibits far exceeded that of any previous show. Through the exertions of Mr. A. CARTER, Hon. Sec., and an energetic committee, the Shanklin Show is the largest and most popular in the Garden Isle.

The local horticultural society of the picturesque, fertile, and quite village of Niton held their third summer show in the grounds of Lady MARY GORDON at "The Orchard" on August 18. The exhibits

by PERCY LINDLEY, can confidently be recommended to all who are planning a continental trip this autumn. Among the new features of this edition of the Tourist Guide, are a series of maps and a chapter upon cycling routes in Holland, Belgium, and Germany. Not the least attractive features of the hand-book are the charming illustrations, and of quite another nature, the "dull, useful information" as to expenses, luggage, &c.

THE BIG GOOSEBERRY.—A competition has just been held by Messrs. STUART & MAX, Kelso, N.B. The firm make a speciality of the fruit, and recently their customers were invited to send their

Laos, where it clammers over rocks, &c., like Ivy, but so vigorously that, according to M. Voinier, it would soon cover a cathedral. It has stout Rhopala-like stems and alternate trifoliate leaves with long stout petioles, each leaflet being oblong-obovate, 4 inches by 5, the margins serrate, the nerves very prominent, rich glossy green above, the under surface covered with soft hairs. It is said to have enormous grape-like fruit, with large seeds, and to be of peculiar flavour. A plant of it recently added to the Kew collection bears out this description in regard to vigor of growth and the characters of the leaves. *W. Watson in Garden and Forest.*

SHIRLEY DISTRICT GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.

The monthly meeting was held at the Parish Room, Shirley, Southampton, on Monday, 16th inst. Mr. S. HEATON, Lecturer in Horticulture to the Isle of Wight County Council, gave an address on the diseases of plants. The lecturer dealt with the subject under three heads—(1) parasitic and insect attacks; (2) deleterious gases, &c., in the air affecting nutrition; (3) a redundancy or deficiency of light, air, moisture, and warmth. Careless transplanting and pruning might also cause serious injury, whilst the absence of proper plant-food, and an excess of organic-matter in the soil, were commented on as fruitful sources of disease. As to combating diseases, the lecturer recommended in severe cases the total destruction by fire of the plants, and in light attacks, persistent spraying.

HAILSTORM AT ACTON, GUNNERSBURY, AND LOCALITY.

On Wednesday last, August 25, about noon, a terrific hailstorm burst over this immediate district, accompanied with heavy peals of thunder and most vivid lightning. The damage done in Acton is most grievous to witness, more especially amongst the many market florists of the neighbourhood. A hurried visit paid to Mr. HUMBY'S Nursery in the Mill Hill Road, revealed such a destruction amongst growing plants still standing outside, and in broken glass, as could scarcely be credited were it not seen. A large stock of Chrysanthemums, which in the morning were the picture of health, were broken and stripped of their foliage in the most surprising manner, other things also suffering extensively (samples of this injury done are sent by the post also). When seen six hours after the storm had burst, hailstones by the barrow-load could be gathered up, many of these, as measured then, being fully an inch in diameter. In this district, too, there are some very pretty villa gardens, which are completely denuded of flowers; and the foliage completely riddled. The foliage of the trees is also stripped off so as to cover the ground quite thickly, some of the trees being almost bare. Other nurseries have also suffered seriously, Mr. PIKE'S being another instance. At Gunnersbury the damage is not apparent; the hailstones here ranged up to the size of nuts; of these there was an enormous quantity. In all probability we shall see more signs of the injury done in a few days' time. The Aucuba shoots enclosed are from a villa garden in Acton [the leaves are reduced to tatters]. *J. Hudson.*



FIG. 42.—BASAL FLOWER (MALE) OF SIR TREVOR LAWRENCE'S SPIKE OF GRAMMATOPHYLLUM SPECIOSUM. (SEE PP. 146, 150.)

were numerous and of excellent quality; the competition being keen in most classes.

The two days' show of the local horticultural society at Freshwater was held on August 18 and 19 in Farringford Park by the permission of Rt. Hon. Lord Tennyson. The exhibits were not so numerous as last year, but the quality of exhibits was good. Better staging and labelling however would be to the advantage of the visitors.

HUDDERSFIELD CHRYSANTHEMUM SOCIETY.

—Owing to the numerous calls on the inhabitants for funds on account of the Indian famine, the Jubilee, &c., it has been decided not to hold the show this year, but to await a more normal condition of the exchequer.

"TOURIST GUIDE TO THE CONTINENT."

This, the Great Eastern Railway Co.'s Guide, edited

largest berries to compete for a gold medal. The winner was a specimen of "Ringer," a deep olive-green skinned variety, and it weighed 22 dw. Mr. T. E. MIDDLETON, Radcliffe-on-Trent, was the grower. Numerous specimens weighing 17 to 20 dw. came from the district embracing Lancashire, Yorkshire, Cheshire, Staffordshire, &c. The heaviest varieties were Ringer, Bobby, London, Lord Derby, and Queen of Trumps. The berries generally are said to be smaller this season than usual.

VITIS VOINIERIANA.—This is a suggested new species in the way of Voinieriana antarctica, but of much larger proportions. It is being distributed by M. Sallier, nurseryman, Neuilly, France, who recommends it for outside cultivation in the west and south of France and for winter gardens in England. It was received by M. Charles Baltet from M. Voinier, of Tonkin, who found it on the Nin-Binh mountains in

HOME CORRESPONDENCE.

BLACKBERRIES.—It is instructive to note that whilst Mr. Wadds finds that very fine American Blackberry, Kittatiny, to thrive best at Cliveden, on a somewhat moist soil, that is even partly under water in the winter, the more famous Parsley-leaved bramble, *Rubus laciniatus*, evidently does best in a much drier position. How well it does thrive in drought, though the soil is of a somewhat stiff and not at all generous nature, may be seen at Maiden Erleigh, Reading, where Mr. Turton has it on a long wire-trellis, where it has been fruiting splendidly. The brambles are fronting to the south-east, and are planted some 15 feet apart. The trellis, which is composed of about six stout strands of wire attached to iron uprights, is 6 feet in height and 150 feet long. The oldest planted brambles having now become strong, entirely cover the space allotted to

each plant, having long stout growths or rods, fruiting very heavily and finely. So much are the berries in demand in Reading, that ten times as many as the trellis produces could easily be sold at highly remunerative prices. Seeing that the fruits are ripe usually a month before our best wild ones, are far finer and much sweeter, it is remarkable that no one so far seems to have embarked in the culture of this fine bramble on a market scale. Without doubt there is money in it, especially if warm, sunny sites, on a deep, retentive soil, be chosen. The ripening season is midway between that of the Raspberry and the wild Blackberry. *A.D.*

CHOICE OF VARIETIES OF STRAWBERRIES.—The advice given on this matter by your correspondents would be more valuable did they state the nature of the ground they have to deal with. We have here a light, sandy loam in which many of the sorts strongly recommended are practically useless, as we have found to our cost. Of the sorts which are really satisfactory in every respect, we have only found four, President, Gunton Park, Royal Sovereign, and Waterloo. We have tried dozens of kinds which have been recommended by various persons, and all more or less have been failures. *Thos. Fletcher, Grapenhall, Cheshire.*

CELOSIA AS BEDDING-OUT PLANTS.—Anyone visiting Ravenscourt Park, Hammersmith, during the next few weeks, will have an opportunity of seeing to what good account *Celosia pyramidalis plumosa* is turned to as a "bedder." The plants are admirably grown, and the colours distinct, ranging between soft yellow, gold, and rich crimson. Some are planted in masses, sufficient room being allowed to each plant to develop its true character, with the result that each mass or bed so planted appeared to be composed of specimen-plants. The same may be said of plants intermixed with other subjects. The superintendent is to be complimented upon the success of his work, and the appearance of his flower-beds. There is evidence of his skill as a landscape-gardener at every turn and corner of the park. *H. W. W.*

BRICK-COVERED VINE-BORDERS.—Having seen the Vine-borders at Combe Abbey last September, I can endorse all that Mr. Miller has said respecting them. The appearance of the Vines, and the quality of the fruit, bear testimony to his system of Grape-growing being the correct one. I may add that the brick-coverings are placed about an inch apart, so that the air is not excluded from the borders; at the same time they retard evaporation, and being absorbent, hold a quantity of moisture after watering and damping down. They also give the borders a more tidy appearance than the ordinary mulching of manure. Mr. Miller called my attention to the quantity of fibrous roots underneath the bricks; several bricks on different parts of the borders were removed, and in each case there was a mass of feeders under them. *H. Stark, Kingswood, Birmingham.*

— On taking charge of the gardens at Aston Rowant House, Oxford, some two years and a half ago, I found the vine-borders there covered with bricks. Not having seen or heard of such a practice before, I was very adverse to it. Lady Chichele Plowden, who has a knowledge of fruits, and fruit-culture, and is a thorough gardener and botanist, informed me the practice had been attended with success in previous years. I therefore closely watched the results, giving the Vines the usual orthodox treatment. The Grapes in the Muscat vineyard, which contained three varieties, and were planted two years previous, carried good bunches, well ripened and finished. The adjoining vineyard, planted with all black varieties, and canes about twenty-five years old, proved equally satisfactory under the "brick" treatment, and carried very fine, well-finished bunches also. My practice differed somewhat from that Mr. Miller described in your last issue. I removed the bricks from the borders in the autumn, not replacing them again until the house was ready for starting, placing long boards on the borders to walk upon. I found upon examination under the bricks, the surface of the border was a network of white fleshy roots or feeders. These roots to some extent perished by allowing the bricks to remain on them. I therefore removed them, at the same time covering the surface of the border with loam. My experience is that brick-covered vine-borders require to be watered with great care, especially so if the soil is of a retentive nature. A great many of the bricks I used were hollowed out on the one side. The concave side being placed upper-

most held the manure water with which the houses were damped down. *W. H. Clarke, Wellington, Somerset.*

MALVA ALCEA.—This is a good and useful plant for the wilder parts of the garden, remaining in full flower for six weeks from the beginning of August. It is sold in nurseries under two or three names, being a variable plant: it is a native of the South of Europe, and is perennial from a hard woody base, and does not last more than three or four years, but seedlings come in abundance round the parent. It grows about 5 or 6 feet high when full grown, and is not particular about soil or surroundings. There is nothing ornamental about it when out of flower. The flowers are large, and coloured clear rose, the colour of those of our native *Malva moschata*. It seems to form spontaneous hybrids freely with that species, of which in its white variety a large number grow in the rough parts of this garden. Many of the hybrids are white, but I have never had the type white, though it probably might be found white in its native home. The plants are much branched, and as there is a quick succession of flowers on each twig, they are useful for cutting. *C. Wolley-Dod, Edge Hall, Malpas.*

A SOUTH OF ENGLAND CARNATION SHOW.—Unlike "A. D.," I cannot bring myself to contemplate with much favour the proposal to found a Southern Counties Carnation Society. If there are enough growers at Southampton to form a small local society, well and good; but, seeing that the county of Hampshire adjoins Surrey and Berks, and comes very near to Bucks and Middlesex, it appears to needlessly trench upon the ground already covered by the London Society. If the Southern Counties require a new society, the western and eastern will likely follow suit, and then we shall have the Carnation interest broken up into a series of minor societies, each one of which will find it extremely difficult to maintain its organisation if formed. The circular signed by "W. Garton, Junr.," reveals too much. He proposes to induce "amateurs" to become members of his new society by expressing his willingness to supply them with twelve good and well-rooted plants of different "varieties," which appears to me to be playing down somewhat low. Every amateur cultivator of the Carnation so-called is more or less a dealer in plants, and I have a shrewd suspicion that what W. Garton, Junr., seeks to accomplish, is the formation of a centre, by means of which he may dispose of his surplus plants, as he somewhat significantly remarks that he "purposes to set aside out of his large stock every season a certain number of plants to be distributed among this class of competitors." I presume he means to sell them to these competitors, especially as the circular further sets forth that the "annual subscription is fixed at 5s., and is to go to the prize fund," which, I presume, means that the promoter will bear the expenses of organisation and working. This same vicious principle is in operation in connection with the National Auricula and Carnation Societies, as gifts of seeds are held out to induce persons to subscribe. This is subversive of legitimate trade. For my own part, as an old florist, desirous of upholding the best traditions of floriculture, I hope the attempt to form a Southern Carnation Society will signally fail. *An Old Florist.*

THE FAULTY FRUIT CROP.—In reply to "A. D.'s" inquiry in your last issue, I have thinned the blossoms on fruit-trees on a moderate scale in the spring. Most of them have been Pear-trees that were profusely covered with bloom; a few Apples also, including Cox's Orange Pippin. The trees are Standards and Pyramids eight to twelve years old in a garden on a fair slope to nearly due south with excellent protection; soil fairly heavy. Varieties of Pears, Williams' Bon Chrétien, Beurré Diel (Standards), with the same sorts, and also Marie Louise, Superfin, Louise Bonne, Doyenné du Comice, and various others, as Pyramids. Only Thompsons and Nouvelle Fulvie are grown on a south wall, and had no protection. The disbudding was done from about four to two weeks before flowering, and it relieved the trees of from 40 to 70 per cent. of promising buds, even more, but results are uniform—practically a complete failure of fruit. A striking exception is a young Standard Pear, transplanted in the spring of 1895 into line with other standards. After similar disbudding, this tree is bearing a crop of four dozen fruits, reduced to one on each bunch, where five to eight Pears originally set to each bunch. Although this tree flowered simultaneously with the

other standards, [the result is striking. The other standards gave a moderate crop last year when there were none on the recently transplanted tree. I believe the abundant rains last autumn have been the cause of producing weakly flowers, and it may be that the warm, damp month of March this spring may have accentuated the evil, followed as it was by such trying weather in April and May. *H. H. R., Forest Hill.*

BRITISH ASSOCIATION.

THE following extracts relating to the progress of physiology are taken from a report in the *Times* of Prof. Michael Foster's address to the section of physiology now in session at Toronto:—

"But there is a still larger outcome from the professorial chair and the physiological laboratory than the training of the student; these are opportunities not for teaching only, but also for research. And, perhaps, in no respect has the development during the past thirteen years been so marked as in this. Never so clearly as during this period has it become recognised that each post for teaching is also a post for learning, that among academic duties the making knowledge is as urgent as the distributing it, and that among professorial qualifications the gift of garnering new truths is at least as needful as facility in the didactic exposition of old ones. Thirteen years have seen a great change in this matter, and the progress has been perhaps greater on this side of the water than on the other, so far as English-speaking people are concerned. We on the other side have witnessed with envy the establishment on this side of a university, physiology having in it an honoured place, the keynote of which is the development of original research. It will, I venture to think, be considered a strong confirmation of my present theme, that the Clark University at Worcester was founded only ten years ago. And here, as an English-speaking person, may I be allowed to point out, not without pride, that these thirteen years of increased opportunity have been thirteen years of increased fruitfulness. In the history of our science, among the names of the great men who have made epochs, English names, from Harvey onwards, occupy no mean place; but the greatness of such great men is of no national birth—it comes as it lists, and is independent of time and of place. If we turn to the more everyday workers, whose continued labours more slowly build up the growing edifice and provide the needful nourishment for the greatness of which I have just spoken, may I, I will dare to say, affirm that the last thirteen years have brought contributions to physiology, made known in the English tongue, which, whether we regard their quantity or their quality, significantly outdo the like contributions made in any foregoing period of the same length. Those contributions have been equally as numerous, equally as good on this side as on the other side of the waters.

The development of which I have spoken is an outcome of the progressive activity of the age, and the dominant note of that activity is heard in the word "commercial." Noblemen and noblewomen open shops, and every one, low as well as high, presses forward towards large or quick profits. The very influences which have made devotion to scientific inquiry a possible means of livelihood, and so fostered scientific investigation, are creating a new danger. The path of the professor was in old times narrow and strait, and only the few who had a real call cared to tread it; nowadays there is some fear lest it become so broad and so easy as to tempt those who are in no way fitted for it. There is an increasing risk of men undertaking a research, not because a question is crying out to them to be answered, but in the hope that the publication of their results may win for them a lucrative post. There is, moreover, an even greater evil ahead. The man who lights on a new scientific method holds the key of a chamber in which much gold may be stored up; and strong is the temptation for him to keep the new knowledge to himself until he has filled his fill, while all the time his brother-inquirers are wandering about in the dark through lack of that which he possesses. Such a selfish withholding of new scientific truth is beginning to be not rare in some branches of knowledge. May it never come near us!

THE NERVOUS SYSTEM.

Fruitful as have been the labours of the past dozen years, we may rightly consider them as but the earnest of that which is to come; and those of us who are far down on the slope of life, may wistfully look forward to the next meeting of the Association on these Western shores, wondering what marvels will then be told. Physiology, even in the narrow sense to which, by emphasis on the waver ng barrier which parts the animal from the plant, it is restricted in this section, deals with many kinds of being, and with many things in each. But, somewhat as man, in one aspect a tiny fragment of the world, still more of the universe, in another aspect looms so great as to overshadow everything else; so the nervous system, seen from one point of view, is no more than a mere part of the whole organism, but seen from another point of view, seems by its importance to swallow up all the rest. As man is apt to look upon all other things as mainly subserving his interests and purposes, so the physiologist, but with more justice, may regard all the rest

of the body as mainly subserving the welfare of the nervous system; and, as man was created last, so our natural knowledge of the working of that nervous system has been the latest in its growth. But, if there be any truth in what I have urged to-day, we are witnessing a growth which promises to be as rapid as it has seemed to be delayed. Little spirit of prophecy is needed to foretell that in the not so distant future the teacher of physiology will hurry over the themes on which he now dwells so long, in order that he may have time to expound the most important of all the truths which he has to tell—those which have to do with the manifold workings of the brain.

And I will be here so bold as to dare to point out that this development of his science must, in the times to come, influence the attitude of the physiologist towards the world, and ought to influence the attitude of the world towards him. I imagine that if a plebiscite, limited even to instructed, I might almost say scientific, men, were taken at the present moment, it would be found that the most prevalent conception of physiology is, that it is a something which is in some way an appendage to the art of medicine. That physiology is, and always must be, the basis of the science of healing is so much a truism that I would not venture to repeat it here were it not that some of those enemies alike to science and humanity, who are at times called anti-vivisectionists, and whose zeal often outruns, not only discretion, but even truth, have quite recently asserted that I think otherwise. Should such an hallucination ever threaten to

nervous action, and a fuller, exacter knowledge of the laws which govern the sweep of nervous impulses along fibre and cell, give us wider and directer command over the moulding of the growing nervous mechanism and the maintenance and regulation of the grown one—then, assuredly, physiology will take its place as a judge of appeal in questions not only of the body, but of the mind: it will raise its voice not in the hospital and consulting room only, but also in the senate and the school.

SUPPLY OF FUEL.

Lord Kelvin, speaking on the fuel and air supply of the earth, said that all the known fuel on the earth is the residue of ancient vegetation. One ton of average fuel takes 8 tons of oxygen to burn it, and therefore its vegetable origins, decomposing carbonic acid and water by the power of sunlight, gave three tons of oxygen to our atmosphere. Every square metre of the earth's surface bears 10 tons of air, of which 2 tons is oxygen. The whole surface is 134 thousand millions of acres, or 510 million millions of square metres. Hence there is not more than 840 million million tons of fuel in the earth; and this is probably the exact amount, because it is probable that all the oxygen of our atmosphere came from primeval vegetation. The surely available coal supply of England, Scotland, and Wales was estimated by the Coal Supply Commission of 1881, which included Sir Roderick Murchison and Sir Andrew Ramsay among its members, as being 146 thousand million tons. This is approximately six-

Floral Committee.

Present: W. Marshall, Esq., chairman; and Messrs. O. Thomas, Chas. T. Drury, H. B. May, R. Dean, Geo. Stevens, J. F. McLeod, Chas. Jeffries, J. D. Pawle, Jas. Walker, Geo. Nicholson, Jno. Fraser, H. J. Jones, R. M. Hogg, and J. Fraser.

A First-class Certificate was awarded to *Ficus radicans* variegata, eight plants of which were shown by Mr. W. BULL, New and Rare Plant Establishment, King's Road, Chelsea. These are graceful and ornamental. The variegation is good, and is always, from the margin of the leaf inwards, in most cases, there being but little green left. Mr. BULL also showed two plants of *Musa superba*.

Several new Carnations, including selfs and yellow-ground Picotees were shown by Mr. G. H. McCULLOCH, Dissington, Hall, Northumberland.

A few Roses were shown by Messrs. W. PAUL & SONS, Waltham Cross. Good new varieties like *Empress Alexandra* of Russia, T., *Waltham Standard*, H.F., and *Aurora*, a H.T. bedder, were included.

Sprays of the erect species of *Clematis* known as *Davidiana* were shown by Sir TREVOR LAWRENCE, Burford, Dorking (gr., Mr. Bain). The flowers are small, blue, and are produced in whorls, whilst the foliage is large and Dahlia-like.

Clumps of Heather, very suggestive of the moors, came



FIG. 43.—MR. MCINDOE'S FIRST-PRIZE EXHIBIT OF SIXTY DISHES OF FRUIT IN THE VICTORIAN FRUIT CLASS AT THE SHREWSBURY SHOW.

(Mr. McIndoe was also awarded the Special Victorian Medal offered by the President to the Champion Exhibitor. See Report in our last issue.)

possess me, I should only have to turn to the little we yet know of the physiology of the nervous system and remind myself how great a help the results of pure physiological curiosity—I repeat the words, pure physiological curiosity, for curiosity is the mother of science—have been, alike to the surgeon and the physician, in the treatment of those in some way most afflicted maladies, the diseases of the nervous system. No, physiology is, and always must be, the basis of the science of healing; but it is something more. When physiology is dealing with those parts of the body which we call muscular, vascular, glandular tissues and the like, rightly handled she points out the way not only to mend that which is hurt, to repair the damages of bad usage and disease, but so to train the growing tissues and to guide the grown ones as that the best use may be made of them for the purposes of life. She not only heals, she governs and educates. Nor does she do otherwise when she comes to deal with the nervous tissues. Nay, it is the very prerogative of these nervous tissues that their life is, above that of all the other tissues, contingent on their environment and susceptible of education. If increasing knowledge gives us increasing power so to mould a muscular fibre that it shall play to the best the part which it has to play in life, the little knowledge we at present possess gives us at least much confidence in a coming far greater power over the nerve-cell. This is not the place to plunge into the deep waters of the relation which the body bears to the mind; but this at least stares us in the face—that changes in what we call the body bring about changes in what we call the mind. When we alter the one we alter the other. If, as the whole past history of our science leads us to expect, in the coming years a clearer and clearer insight into the nature and conditions of that molecular dance which is to us the material token of

tenths of a ton per square metre of area of Great Britain. To burn this quantity would take one and eight-tenths of a ton of oxygen, or within two-tenths of a ton of the total oxygen of the atmosphere resting on each square metre of Great Britain. The Commission estimated 56 thousand million tons more of coal as probably existing at the present in lower and less easily-accessible strata. It may, therefore, be considered as almost quite certain that Great Britain could not burn all its own coal with its own air, and therefore that the coal of Great Britain is considerably in excess of the fuel supply of the rest of the world reckoned per equal areas whether of land or sea.

(To be continued.)

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 24.—Seldom is there so small a display at the fortnightly meetings than was the case on Tuesday last in the Drill Hall, James Street, Westminster. Horticulturists are evidently taking their holidays in numbers, and the attendance was in proportion to the exhibition. Orchids were very few, but amongst them was a spike of the Mammoth *Grammatophyllum speciosum* shown by Sir TREVOR LAWRENCE (figured on p. 145). Among other exhibits, the most prominent were Dahlias and Lilies. A moderate quantity of fruit was shown, including an excellent new Melon from the Royal Gardens at Frogmore. Mr. A. H. PEARSON delivered an interesting and able lecture upon Plums.

from Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery Chelsea. The varieties included *Erica vulgaris*, *E. v. variegata*, *E. v. aurea*, *E. v. fl. pleno*, *E. v. Hammondii* (white), *E. v. cuprea*, *E. v. monstrosa*, and *E. v. Alporti*, the last-named being one of the most showy. *E. cinerea alba* and *E. Mackayana* were included. Allied to the *Ericas* is *Menziesia*, from North America and Japan. *M. polifolia* *atro purpurea* and *M. p. alba* were well shown. This plant is more correctly named *Daboecia polifolia*. Flowering sprays of *Rhus glabra* (coccinea) and *R. Osbeckii* were likewise from Messrs. Veitch (Silver Banksian Medal).

PURNELL PURNELL, Esq., Woodlands, Streatham, exhibited a group of miscellaneous plants, which included well-grown *Fuchsias*, *Dracaenas*, *Caladiums*, *Ferns*, &c. (Silver Flora Medal).

From Mr. THOS. S. WARE, Hale Farm Nurseries, near Tottenham, was shown a collection of Dahlias blooms in sprays. This included *Cactus*, *Show*, *Pompon*, and other varieties, and was awarded a Silver Flora Medal. In addition to the above, a few good *Glaudiolus* were shown in spikes, including one named *Rev. W. Wilks*; also *Montbretias*, and blooms of *Lilium Letichlini*, pale yellow with purple-coloured spots.

Messrs. R. WALLACE & Co., Kilnfield Nurseries, Colchester, made the brightest display in the hall with a stand of *Lilium* blooms, *Glaudiolus*, &c. Varieties of *L. speciosum*, *L. tigrinum*, *L. Batemannii*, and other species; also some new *Glaudiolus* and *Tritonias* were noticed (Silver Flora Medal).

By far the largest exhibit on this occasion was a monster group of *Caladiums* from the nurseries of Messrs. JNO. LAING & SONS, Forest Hill, S.E. It was arranged upon the floor in an irregularly-faced group, and the *Caladiums* were freely interspersed with graceful *Palms* and *Ferns*. The

Caladiums represented many new and choice varieties, and the exhibit generally was highly praiseworthy. A smaller group of well-coloured medium-sized Crotons from the same nurseries deserves commendation (Silver-gilt Flora Medal).

Hibiscus Manihot was shown by F. D. LAMBERT, Esq., Moor Hall, Cookham (gr., Mr. Fulford). The plants were about 6 feet high, had *Aralia* like foliage, and bore numerous very large yellow flowers on an erect spike.

DAHLIAS.—Show, Cactus, and Pompon varieties came from several sources, the Cactus types predominating. Mr. J. GREEN, Norfolk Nurseries, Dereham, sent by post several blooms each of Cactus varieties of a decidedly promising character, but the way in which they were shown, and the small size of the blooms, detracted from their actual value. The best varieties were Indian Prince, Midnight Sun, Mr. Moore, Norfolk Hero, and Royal Purple. The committee requested to see them again in better condition.

Mr. J. STREDWICK, Silverhill, St. Leonards, had some varieties of decided promise two of which received Awards of Merit, viz., *Night*, maroon-crimson, the tips bright wine-crimson, a large true Cactus, with full flowers, having a better centre than those of *Matchless*, of which it is a brighter type; and *Amber*, yellow ground, the points of the petals deep amber, very bright and effective, a great improvement on *Harmony*, having much more of the true Cactus character. Two others are also good, viz., *Porcupine*, bright crimson, shaded with maroon, the florets somewhat erect; and *Frank Woodgate*, bright orange, somewhat distinct in colour, though much resembling *Mrs. A. Beck*, both the foregoing being true Cactus types.

From Mr. C. TURNER, Royal Nursery, Slough, came some charming new Pompon varieties, to three of which Awards of Merit were made: viz., *Vesta*, white, of perfect shape, though as shown a little deficient in the centre, as well as in purity of colour, defects which time may remove; *Phryne*, deep yellow, distinctly and regularly edged with bright salmon-red, distinct and attractive; and *Hypatia*, bright terra-cotta, a distinct shade of colour with a rosy tint thro' and over it, and lemon centre of perfect shape and centre. Others were *Ida*, yellow, heavily tipped with rosy-carmine; *Madeleine*, yellow, distinctly tipped with rosy-purple, very pretty; and *Edna*, a small bright crimson self; also *Marjorie* fellows, an attractive show variety, amber-yellow, with clear yellow centre, and having a tip or shading of puce-mauve (Award of Merit).

From Mr. G. ST. PIERRE HARRIS, Orpington, came four new show varieties: viz., *Barmid*, *Freedom*, *Mariner*, and *Singularity*, which will no doubt be seen in better condition later on.

Orchid Committee.

Present: H. J. Veitch, Esq., Chairman and Messrs. De B. Crawshaw, H. J. Chapman, W. H. White, J. T. Sabriel, W. H. Young, E. Hill, T. W. Bond, W. Cobb, A. H. Smece, A. Mason, and H. M. Pollett.

A First-class Certificate was unanimously awarded to *Grammatophyllum speciosum*, a spike (upwards of 7 feet in length) of which was shown by Sir TREVOR LAWRENCE, Burford, Dorking (gr., Mr. W. H. White). The flowers are yellow, spotted chocolate or reddish-purple, and are well portrayed in the accompanying illustrations (see figs. 41, 42).

A Gold Medal was deservedly awarded it, in addition to the First-class Certificate. From Sir Trevor's garden also came *Laelio-Cattleya Janet*, a very pretty hybrid, its white lip, with coloured margin and orange throat being very attractive.

Mr. W. BULL, King's Road, Chelsea, obtained an Award of Merit for *Goodyera Rolissoni*. The leaves are velvety-green, with golden-yellow margins, and occasionally variegated through the lamina in several places.

An Award of Merit was recommended to *Laelio-Cattleya Juna*, shown by N. C. COOKSON, Esq., Oakwood, Wylam-on-Tyne. It is a hybrid from *C. Mossie* and *L. majalis*. The flower is neat and compact, sepals and petals very pale rose, sepals slightly tinged with yellow at the tips, lip not coloured very deeply, throat orange, with cream-coloured veins—a pretty flower, with curious blendings of colour.

R. L. MEASURES, Esq., Cambridge Lodge, Camberwell (gr., Mr. Chapman), exhibited *Laelio-Cattleya Andreana* (a cross between *Laelio-Cattleya elegans* and *Cattleya bicolor*); all the flower except the lip is practically white, shaded faint rose on the exterior. The lip is recurved back at the point, which, in proportion to the base of the lip, is rather spreading. Tip of lip handsomely coloured, and the flower generally pretty. *Masdevallia Lowii* was shown from the same gardens.

Messrs. JAS. VEITCH & SONS, Chelsea, were awarded a Silver Banksian Medal for a small group of hybrids. This included *Laelio-Cattleya Nysa* (crispa ♀, × *Warszewiczii* ♂), remarkable for a very fine lip; *L.-C. Parysatis*, *L.-C. Prosperine superba*, &c. *Cattleya intertexta* was shown in flower; it has a curiously mottled lip. Also *Cypripedium Janet* and *C. melanthus* (Hookeri ♀, × *Stoneli* ♂), an elegant flower and spike.

Messrs. F. SANDER & CO., St. Albans, had *Catasetum fimbriatum* in bloom; also *Laelio-Cattleya Sanderae* and *L.-C. Robin Measures*. The sepals and petals are yellow in each case, but the lip differs in shape and colouring; the latter is also a larger flower. The collection included *Laelia amanda*, and a hybrid between *Laelia pumila* and *C. Harrisoniae* violacea, &c.

Messrs. HUGH LOW & CO., Clapton, had *Cypripedium Alfred Hellington*, a very pretty form of *Laelio-Cattleya Canhamiana*, and *L.-C. Harrisoni* prestans.

CHAS. L. N. INGRAM, Esq., Elstead House, Godalming, showed *Laelio-Cattleya* × *Radiance* (*L. purpurata* Dominiana × *C. Dowiana*). Another *Laelio-Cattleya*, named

Ruby Gem, from *Cattleya Lawrenceana* × *Laelia elegans*, had a neat flower, with well-coloured lip. *Cypripedium gracile*, from C. Haynaldianum × *C. Swanianum*, has narrow petals, marked with prominent chocolate spots. The lip is light purple, and the flower generally is attenuated in appearance.

Fruit Committee.

Present: Philip Crowley, Esq., Chairman, and Messrs. Jas. H. Veitch, A. F. Barron, W. Pope, A. H. Pearson, Alex. Dean, G. S. Miles, H. Balderson, G. Norman, Robert Fife, and F. Q. Lane.

The only Award of Merit recommended by the committee was that to a seedling Melon named *Frogmore Scarlet*, several fruits of which were shown by Mr. O. THOMAS, Royal Gardens, Frogmore. The fruits were above medium size, closely, but not prominently netted, exterior straw-coloured, flesh scarlet, and quality first-class.

Mr. GEO. WYTHES, gr. to Earl Percy, Syon House, Brentford, showed thirty Melon fruits of moderate size, but good appearance. These were of the variety *Middlesex Hero*. Mr. Wythes had also a seedling Melon from a cross between *Middlesex Hero* and *Beauty of Syon*.

A collection of Grapes from Captain MACDONALD, Hurst Side, West Moulsey (gr., Mr. G. Elliott), was awarded a Silver Knightian Medal. It included three bunches of *Foster's Seedling*, six bunches of *Gros Maroc*, and a equal number of *Madresfield Court*. The quality of the collection deserves praise, the berries and bunches being large and generally well-finished.

Mr. A. H. RICKWOOD, gr. to the Dowager Lady FRAKE, Fulwell Park, exhibited a commendable collection of fruit, including thirteen dishes of Peaches, two of Pears and four of Apples, also Morello Cherries, Red and White Currants, four dishes of Plums, and three bunches of Black Hambro Grapes (Silver Banksian Medal).

From Messrs. T. F. RIVERS & SON, Sawbridgeworth, were exhibited bunches of *Gradiška*, *White Grape*, and *Directeur Tisserand*, *Black Grape*. Also splendid examples of *Late Transparent Gage Plum*, *Golden Transparent Gage*, and *Monarch*, all from pot trees, grown in a warm house.

Messrs. GEO. BUNYARD & CO., Maidstone, illustrated the exceptional crop of Nuts of the present season by showing a collection of twenty varieties of Cob Nuts and Filberts. Some of the clusters were remarkable, especially the variety, *Duke of Edinburgh*, a variety certificated in 1883.

A collection of vegetables from Mr. T. ROBINSON, gr. to W. LAWRENCE, Esq., Elmsfield House, Hollingbourne, was deservedly awarded a Silver Banksian Medal. There were good Carrots, Potatoes, Turnips, Cabbages, Onions, Beans, Celery, Tomatoes, Beet, Cucumbers, Parsnips, and Marrows.

A collection of eighteen nice specimens of *Covent Garden Favourite* Cucumber was shown by Mr. W. KEMP, Barnes; and Mr. CORBETT, gr. to the Rev. Marquis of NORMANBY, Mulgrave Castle, near Corbett, exhibited fruits and sprays of fruit of *Tomato*, *Royal Sovereign* and *Mulgrave Castle*, both of them of promising character, but hardly distinctive.

In the Veitchian competition for flavour in Apples and Pears, the 1st prize Apple was *Irish Peach*, shown Mr. GEO. WYTHES; 2nd, *Lady Sudeley*, from Mr. HERRIN, Dropmore Gardens. There did not appear to be any award made to the Pears.

EASTBOURNE HORTICULTURAL.

AUGUST 18.—There are few more pleasant summer places than Compton Place, and the enormous attendance on the above date again proved how well it pays to get up a really good exhibition, as was once more the case here. A few of the chief prizes were the following:—

Mr. J. WARREN, gr. to J. OFFER, Esq., Handcross Park, for eight stove and greenhouse plants, showing conspicuous examples of good cultivation. Mr. T. PORTNELL, gr. to Sir A. LAMB, Battle, was 2nd in that class, but beat Mr. WARREN in a class for six similar plants. The eight exotic Ferns from Mr. WARREN were grand. Mr. J. WARREN was ahead of Mr. PORTNELL for eight and also for six ornamental or variegated foliage plants; particularly well-coloured were his *Crotons Sunset* and *triumphans*.

One of the best classes was for groups of Ferns, Mr. A. McBean, gr. to Miss WRAGGE, Braemar, just beating Mr. T. Fuller, gr. to J. HOOKER, Esq., Arundel Road. Mr. WARREN was ahead for six table plants; and Mr. T. PORTNELL for some well-grown pyramidal *Fuchsias*.

FRUIT was very good, especially the Grapes, eight competing in the class for three bunches of any black variety; Mr. T. Tugwell, gr. to Miss SWIFT, Beechwood, winning with well-finished *Black Hambro*, and again for three of any white variety with *Muscat of Alexandria*; a magnificent bunch of *Black Hambro* securing 1st for him in a class for a single bunch, any variety.

The best collection of fruit came from Mr. W. F. THOMAS, Wannock, Polegate, who was also ahead for a collection grown outdoors.

CUT FLOWERS.—Mr. WARREN was in front of Mr. PORTNELL for twelve varieties of stove and greenhouse cut flowers. The best thirty-six cut Roses came from Mr. WILL TAYLOR, Hampstead. R. E. WEST, Esq., Wray Park, Reigate, won for twenty-four and twelve blooms distinct.

Seven competed in the class for three stands of flowers, Mrs. SHERRARD, Hallsam, winning with a very pretty arrangement.

VEGETABLES were very good.

Some of the numerous non-competitive exhibits in one from Messrs. J. CHAL & SONS, Crawley, who had good stands of Cactus, Pompon, and other Dahlias, did Mr. J. CHARLTON, Tunbridge Wells, in addition to stand of herbaceous cut flowers. A superb group came Mr. H. MAY, Compton Place, and from Messrs. G. SCOTT, Eastbourne. Fruit was well shown by Mr. THOMAS, Wannock, Polegate.

TROWBRIDGE HORTICULTURAL.

AUGUST 18.—The Trowbridge Society, which can be one of the oldest horticultural societies in existence, celebrated its forty-eighth annual show on the above date, a society which proceeds pretty much upon the same lines did thirty years ago; it always brings together a large attractive show, and we thought this the best we have seen there. Several large tents were set up in the field near the railway station, and every one of the fully occupied. There were, as usual, *Fuchsias*, the which can be seen only in the Trowbridge district many of the flowering and foliage plants compare favourably with other exhibitions in the West. Rare two such fine collections of nine stove and greenhouse been staged in the West; in the sixes and threes also were well-finished examples. Cut flowers were abundant and very good. There was capital fruit, large quantities of superb vegetables, while the plants shown by workers would have done credit to the best exhibition held in the country.

PLANTS.—Mr. MATTHEWS, gr. to Sir W. R. BROWN, Trowbridge, a young gardener of great promise as a cultivator, was placed 1st with nine stove and greenhouse plants, a well-balanced collection. Mr. GEORGE TUCKER, who has succeeded to the plants he grew as his late employer, Major W. P. CLARK, was 2nd. The exhibitors were bracketed equal 1sts with six plants, did they come to each other in size and finish.

Mr. TUCKER was 1st with three admirable specimen first prize specimen plant was a piece of *Cycas revoluta* Mr. S. AGAR, gr. to Mrs. MACKAY, Trowbridge. The new or rare plant was a finely-coloured specimen of *Alphitoea* Gem, from Mr. G. PYM, gr. to Mrs. GOULD, Trowbridge.

The old reputation Trowbridge has for *Fuchsias* was maintained by Mr. TUCKER, who was first with six, with four plants, and the practice of showing a number of light and dark varieties is a good one. One best dark varieties for exhibition because such a good, and so free of bloom is *Dod's Favourite*, which was raised in this neighbourhood seventeen years ago; it is always a six exhibition varieties.

Such things as good *Cockscombs*; finely grown flowered specimen *mal Pelargoniums*, especially the Mr. TUCKER; *Begonias* single and double flowered, mones, well-grown and bloomed, *Gloxinias*, &c., in the flowering plants, with the exception of those few groups. Groups arranged for effect are a new introduction at Trowbridge, and they are taking well; there are classes for them, but in the most important Mr. G. was 1st with a worthy object lesson in artistic group will not be lost upon the gardeners present at the show.

Mr. R. FOSBROOKE, gr. to R. MOULTON, Esq., Bradfield, Avon, was 1st in the next most important class for a group of plants.

Mr. H. MATTHEWS had the best eight fine-foliated fine *Palms* and brilliant *Crotons*, with a good example of *Phormium tenax variegatum* being prominent. E. S. COLE & SONS, Nurserymen, Bath, were 2nd, were good bushes of *Coleus*, also good *Caladiums*, all sixes; and there was a fine bank of *Ferns* and mosses being shown in groups of fifteen; but on this occasion were too much crowded to display themselves to advantage. Mr. G. TUCKER had the best collection.

CUT FLOWERS included *Roses*, and they were very good for the time of year. In these classes Mr. J. MATTHEWS, seryman, Oxford, had it his own way, for he was 1st in the class for twelve varieties, and with 24 *Tea-scented* varieties, all being clean, fresh, and the main of the 2nd prizes went to Mr. THOMAS, Lower Easton, Bristol, an old amateur cultivator of years' standing. *Dahlias* were numerous, and of good quality for the coming competition at the Crystal Palace.

KEYNES & CO., Salisbury, had the best 24 and also the 12 bunches of Cactus. Messrs. J. CRAY & CO., Froxton, were 2nd. Mr. J. WALKER, Thame, the best 12 *Pansies* also the best 12 *Pompons*. Of seedling *Dahlias* there were very pretty pale lilac Cactus variety from Mr. G. HUNTER, which is full of promise.

Then there were classes for 24 bunches of cut flowers, which the usual stove and greenhouse subjects were present, *Zonal Pelargoniums*, very good and bright, and *Victoria Asters*, and the delicate quilled *Pansies*, *Carnations*, *Hollyhocks*, &c. *Verbenas* in state are still invited, but it is time they were displaced by Sweet Peas.

FRUIT is always good at Trowbridge, and it was so on this occasion. The only collection of ten dishes came from Mr. STRICKELL, a very good one. Mr. G. PYM had the dishes, staging in excellent character *Black Hambro*, *Foster's Seedling Grapes*, *Victoria Nectarine*, 1st *Peach*, *Pears* and *Melons*.

A Diamond Jubilee Class was originated for eight bunches of Grapes. Mr. Carpenter, gr. to A. R. BAILEY, Esq., Frome, was 1st with Muscat of Alexandria, Alicante, Madresfield Court, and Gros Maroc, having enough of each to make up the required quantity. Mr. FOSTER, Bath, was 2nd, having very good bunches of Muscat of Alexandria, this being his only variety. Mr. FOSTER had the best two bunches of black Grapes, staging good Alicante; Mr. T. Smith, gr. to the Bishop of Salisbury, had the two best bunches of white in Foster's Seedling; Mr. CLACK, grower to C. E. COLSTON, Esq., Devizes, the two best bunches of black Muscats in Madresfield Court; and Mr. CARPENTER the best two bunches of white Muscats in that of Alexandria. Barrington and Sea Bight were the best Peaches; Pine Apple and Royal the best Nectarines; Oullins' Golden Gage and Pond's the best Plums; Beauty of Bath, Irish Peach, and Quarrenden the best dessert Apples; Lord Suffield, Peasegood's Nonsuch, and Warner's King the best culinary varieties. A very fine lot of Nuts and Filberts were staged also, and grand Morello Cherries.

Of VEGETABLES there was an enormous display, and generally of remarkably good quality.

MISCELLANEOUS EXHIBITS comprised a charming collection of Garden Roses, from Messrs. G. COOLIDGE & SONS, Bath.

ROYAL HORTICULTURAL OF ABERDEEN.

AUGUST, 19, 20, 21.—This society held its annual show on the above dates in the grounds of Robert Gordon's College, Aberdeen. Naturally, the recent wet weather has injured the flowers, and the show suffered somewhat in the cut-flower sections. This was more than compensated for, however, in the magnificent display of greenhouse plants. Indeed, judges who have attended the show for the past twenty-eight years, declared that they have never seen anything finer in this department.

The entries this year numbered about 1700, or fully 400 fewer than last year, but the display was a most meritorious one. In all sections there were separate competitions for professional and amateur horticulturists, and in a third department valuable prizes were given for the encouragement of working-men amateurs. The arrangements for the show were admirably carried out by the new Secretary of the Society, Mr. J. B. Bannett.

CUT FLOWERS.—Roses were rather poorly represented, but what there was made a beautiful show. The excellence of the Dahlias and Gladioli was remarkable. A special feature in this tent was the fine display of bedding-plants, shown in bunches and pots on a space not exceeding 2 feet by 1 foot. The competitors showed conspicuous taste, and the Society's Silver Medal was worthily won by Mr. ROBERT KILOH, Woodlands Gardens, Cults, with a splendid collection. The model garden contest also brought out some painstaking and unique designs, and Mr. ALEXANDER DOUGLAS, Middlemuir, Belhelvie, carried premier honours. Mr. DOUGLAS introduced a novelty by placing a miniature fountain in the centre of his exhibit. Although not so numerous as usual, the entries in the competition in bouquets, wreaths, and baskets of flowers were in excellent taste. The principal prizetakers in these competitions were Mr. JOHN ROBERTSON, Ferryhill House, Aberdeen; Mr. ROBERT KILOH, Woodlands, Cults; and Mr. ALEX. BURNS, Jun., New Market Buildings, Aberdeen.

POT PLANTS.—In the large marquee, devoted to the housing of the pot plants, were some splendid specimens. Here, as elsewhere, the entries were somewhat fewer than last year, but the quality was above the average, few, if any, inferior plants being staged. In the centre were placed the larger plants, and also groups of plants arranged for effect, on the ground, in circles of 10 feet diameter.

Mr. John Proctor, gr. to Sir WILLIAM HENDERSON, Devanha House, Aberdeen, carried off the beautiful Silver Tea Service with one of the most unique designs ever seen in Aberdeen. Mr. Proctor's design included Crotons, choice Orchids, Ferns, Cactuses, &c., all finely grouped and rising in pyramidal shape to a handsome Cocco Palm as centrepiece. A new exhibitor at the Aberdeen show, Mr. HUTTON, Usan House, Montrose, took 2nd place in the same competition, with a most tasteful arrangement.

In the class for six specimen stove or greenhouse plants, Mr. PROCTOR again carried the prize, with a splendid assortment. Ferns, Pelargoniums, and Dracaenas were well shown.

In Lilies, Mr. LESLIE, Honeybush, took 1st place, with a grand specimen of *Lilium auratum*, which had as many as thirty-six blooms on one spike. The Society's Silver Medal for the best specimen plant in flower was taken by Mr. JOHN PROCTOR, with a superb *Eucharis*; while Mr. HUTTON, Montrose, took a similar award for the best new plant in flower or foliage with *Helleborus illyria*.

Messrs. W. & D. CROLL, Dundee, and Messrs. W. SMITH & SONS, Aberdeen, made fine displays with Roses. Messrs. Smith had also a splendid collection of herbaceous flowering and other plants. The exhibits of pot plants by amateurs and the working class were accommodated in a portion of the Art Gallery Building, adjoining and entering from the grounds. The section was an excellent one; the side tables containing greenhouse plants were of a very high order. Mr. JOHN SIMPSON, Varvil Bank; Mr. BROWNIE, Ellon; and Mr. GILLIES, Aberdeen, were all to the front as amateur exhibitors.

VEGETABLES.—Although not so numerous as last year, the quality was excellent. Some of the Potatoes had the pre-

vailing fault of the year in not being cleaned skinned. The special feature of the vegetable tent was the boxes of vegetables, which were arranged with unusual taste. The premier collection was sent in by Mr. GEORGE MILNE, Cluny Castle, and was the subject of much comment, professionals declaring it to be the best both in point of quality and taste that has been seen at the Society's show for many years. Market gardeners also came forward strongly in this tent, the winners in a tough fight being Mr. ALEX. PATTERSON, Ruthrieston, Mr. JOHN PATTERSON, Sunnybrae, Rubislaw, and Mr. ALEX. DAVIDSON, Kepplestone, Rubislaw. In the amateur class, the chief winners were Mr. WILLIAM LEITH, Crimonmogate Mills, Lomnay; Mr. W. D. BROWNIE, Ellon; and Mr. CHARLES GRAY, Woodside, Aberdeen.

FRUIT.—The show in this section was very fine, and some uncommonly fine specimens were staged, especially of Grapes. Mr. HUTTON, Montrose, is to be congratulated at the large amount of success he achieved at this his first appearance at an Aberdeen show. He worthily carried off quite a number of prizes in this section. Gooseberries were particularly fine, the chief honours in this section being taken by Mr. MIDDLETON, Monymusk House, and Mr. JAMES GRANT, Crimonmogate. For Grapes, Mr. A. HUTTON, Mr. GEORGE M. STUART, Banff, were the chief prize winners. Among other prominent winners in the fruit section were Mr. ANDREW REID, Durris; GEORGE TAYLOR, Raeden; ALEXANDER REID, Urie House, Stonehaven; DAVID CHAPMAN, Aden House; and JOHN DALGARNO, Elgin.

NON-COMPETITIVE EXHIBITS.

Mention must be made of the beautiful displays made by Messrs. BEN REID & Co., Aberdeen, and Messrs.

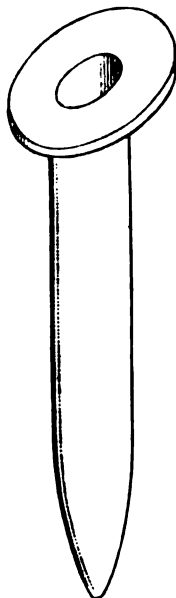


FIG. 44.—ELASTIC TUBE FOR PRESERVING FLOWERS IN BUTTON-HOLES.

COCKER, Rosarians, Aberdeen. These displays were indeed superb, and reflected the highest credit on the firms named. Space will not permit of fuller details.

DEVON AND EXETER HORTICULTURAL.

AUGUST 20.—In proverbially unfavourable weather, the 185th exhibition of this society was held on Northernhay Public Grounds. The classes slightly exceeded in number those of last year, but there were fewer exhibitors. As a whole, the exhibition compared favourably with previous ones, the groups and the vegetables indeed showed higher excellence.

Mr. Mairs, gr. to Sir JOHN SHELLEY, Bart. Shobrooke Park, staged a magnificent collection of vegetables, which was one of the features of the show, and Mr. Rowland, gr. to W. BROCK, Esq., Parkerswell, surpassed all previous efforts in his arrangement of plants for decorative effect.

CUT FLOWERS (OPEN).—For twenty-four Double Dahlias, show and fancy, Mr. G. HUMPHRIES, Chippenham, was 1st, and in the twenty-four Double Cactus class, premier honours were awarded to Mr. W. B. SMALE.

The 1st prize for forty-eight spikes of Gladioli went to F. H. FOX, Esq., Wellington, and for twelve Tea Roses to Messrs. JARMAN & Co., Chard.

SPECIMEN PLANTS.—The value of the 1st prize for specimen plants is not enough to tempt exhibitors from a distance, so that the competition is confined, as it were, to local growers. The classes for twelve stove and greenhouse, and for six stove and greenhouse plants—half in flower and half foliage—was taken by Mr. Rowland, gr. to W. BROCK, Esq., as also was that for six stove and greenhouse flowering plants. Mr. Rowland's plants looked wonderfully well.

For six stove and greenhouse Ferns, premier honours fell to Mr. BARNES, gr. to the Rev. A. H. HAMILTON-GELL, Winslade.

GAUDES.—The miscellaneous group, 11 feet x 15 feet, arranged in an oval space for effect, was keenly contested, the cup falling to Mr. ROWLAND, Mr. G. LOCK, gr. to B. H. HILL, Esq., Cleve, Crediton, being a close 2nd. Instead of the old cone shaped arrangement, both competitors had used virgin cork more or less effectively to make an irregular arch from which sprung light arrangements of Orchids, Grasses, &c.

In the smaller group (11 feet x 8 feet), Mr. BAWDEN, gr. to W. D. RICHARDS, Esq., Beaumont House, Broadclyst, won.

FRUIT.—In the Fruit classes, the chief prize is given by the President for the year, Mr. Alderman POPPLE, Mayor of Exeter, and for this prize the competition was keen, premier place being given to Mr. LLOYD, gr. to V. BRUCKER, Esq., Langport. Mr. LLOYD's collection consisted of Black Hamburgh and Muscat of Alexandria Grapes, Queen Pine, Jargonelle Pears, Pineapple Nectarine, Jefferson's Plum, Brown Turkey Fig, Dymond Peach, Melon Taunton Hero, Quarrenden Apples.

VEGETABLES.—For the collection of twelve kinds there is always much competition, but though all three entries were well staged, Mr. Mairs, gr. to Sir JOHN SHELLEY, was well 1st, and Mr. LOCK was 2nd. In the separate dish classes for vegetables the competition was keen, the entries numerous, and the quality exceptionally high.

The classes for cut flowers filled well, and competition was close.

A collection of plants was staged by the Jadoo Co.; these were growing in Jadoo Fibre. They were bright in colour, healthy and vigorous.

HONORARY EXHIBITS.—Mr. Slade, gr. to Lord POLTIMORE, Poltimore Park, staged a grand lot of *Streptocarpus*, well-grown and full of highly-coloured blossoms, some very fine *Cannas*, *Lilium auratum*, and other plants.

Messrs. ROBERT VITCH & SON, Exeter, showed choice Alpines, *Cannas*, Gladioli, Dahlias, and a charming lot of the new brightly-coloured hardy *Nymphs* floating in water. The EXETER NURSERY Co. staged a fine collection of stove and greenhouse plants; Mr. JAMES WALTERS, Mount Radford, Roses (conspicuous among which was a box of fine blooms of Mrs. John Laing); Messrs. JARMAN & Co., Chard, Double Begonias, Roses, and Dahlias; Mr. WILLIAM RANDALL, Exeter, a general collection of conservatory plants; Mr. W. B. SMALE, Torquay, Dahlias; Messrs. TUPLIN & SONS, Newton Abbot, Carnations.

NEW INVENTION.

FLOWER-TUBE FOR THE BUTTON-HOLE.

MR. SOOTT, of Kirkgate, Leeds, sends us a specimen of a flower-tube for the button-hole which is efficient, inconspicuous, and inexpensive. It is made of india-rubber, and the disc is so inclined at the upper part, as to rest against the lapel of the coat. It is made solid at the point so as to prevent the water being ejected if the tube get pinched. From its elastic nature, the tube adjusts itself to the curve of the coat, and does not project beyond it.

MARKETS.

COVENT GARDEN, AUGUST 26.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, per dozen	2 0-4 0	Marguerites, per 12	2 0-4 0
blooms	2 0-4 0	bunches	2 0-4 0
Asters, 12 bunches	2 0-4 0	Mignonette, per	0 4-0 6
— French, 12 bun.	6 0-12 0	doz. bunches ...	2 0-4 0
Bouvardias, per bn.	4 0-6 0	Myosotis, or Forget-	
Carnations, pr. doz.		me-Not, 12 bunch	1 6-3 0
blooms	0 9-2 0	Orchids:—	
— per doz. bun.	4 0-6 0	Cattleya, 12 blms.	9 0-12 0
Chrysanthemums,		Odontoglossum	
p. doz. blooms ...	0 6-2 0	crispum, 12 bun.	2 0-4 0
— p. doz. bunches	3 0-6 0	Pelargoniums, scar-	
Cornflowers, per		let, per 12 bun.	3 0-6 0
doz. bunches ...	1 0-2 0	— per 12 sprays...	0 4-0 6
Eucharis, per dozen	2 0-4 0	Pyrethrum, 12 bn.	1 6-3 0
Gardenias, per doz.		Roses, Tea, per doz.	0 6-1 0
blooms	2 0-4 0	— yellow (Maré-	
Gladioli, various,		chal), per doz.	1 6-4 0
per doz. bunches	4 0-9 0	— red, per dozen	0 9-1 0
ilium Harriet, per		— pink, per doz.	1 0-2 0
doz. blooms ...	2 0-4 0	— Safrano, p. doz.	1 0-2 0
— Lancifolium,		Roses, per dozen	
per doz. blooms	1 0-2 0	bunches	2 0-6 0
Lily of the Valley,		Stephanotis, dozen	
dozen sprays ...	1 0-2 6	sprays	1 6-3 0
Maidenhair Fern,		Sweet Sultan, per	
per 12 bunches ...	4 0-8 0	dozen bunches ...	1 0-2 0
		Tuberose, 12 blms.	0 8-0 4

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. ... 4 0-12 0	Ferns, small, doz. ... 1 0-2 0
Aspidistra, per doz. ... 12 0-30 0	— various, doz. ... 5 0-12 0
— specimen, each ... 5 0-15 0	Foliage plants, doz. ... 12 0-30 0
Aster, various, per doz. ... 2 6-5 0	Fuchsia, per doz. ... 4 0-6 0
Chrysanthemums, p. doz. pots ... 5 0-9 0	Heliotropes, dozen ... 3 0-4 0
— specimen, or large plants, ea. ... 1 6-2 6	Hydrangea, per dozen ... 8 0-10 0
Cockscombs, dozen ... 2 0-4 0	Liliums, various, per dozen ... 9 0-12 0
Coleus, per doz. ... 3 0-4 0	Marguerites, p. doz. ... 6 0-9 0
Companula, p. doz. ... 4 0-6 0	Mignonette, p. doz. ... 4 0-6 0
Dracenas, each ... 1 0-7 6	Palma, various, ea. ... 2 0-10 0
— various, p. doz. ... 12 0-24 0	— specimens, ea. ... 10 6-24 0
Evergreen shrubs, in variety, doz. ... 6 0-24 0	Pelargoniums, per dozen ... 6 0-10 0
Ficus elastica each ... 1 0-7 6	Rhodanthes, dozen ... 4 0-6 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Dessert, in variety, p. bush. ... 8 0-10 0	Nectarines, selectd. fruit, per doz. ... 6 0-8 0
— Culinary, in variety, p. bush. ... 3 6-5 0	— Medium, p. doz. ... 8 0-4 0
Damsons, p. bush. ... 5 0-5 6	— Seconda, p. doz. ... 1 6-2 0
Figs, per doz. ... 1 0-2 0	Oranges, S. Australian, p. case, containing 120 fruit ... 10 0-12 0
Grapes, Gros Colmar, per lb. ... 1 6-2 0	Peaches, selected fruits, per doz. ... 6 0-8 0
— Gros Maroc, lb. ... 1 0-1 6	— Medium, per doz. ... 2 6-3 0
— Alicante, p. lb. ... 1 0-1 8	— Seconda, per dozen ... 1 6-2 0
— Hamburgs, selected, per lb. ... 1 0-1 6	Pears, various, per bushel ... 4 0-10 0
— 2nd quality, per lb. ... 1 0-1 0	— small, bush. ... 2 0-3 0
— Muscats, "Canon Hall," p. lb. ... 4 0-5 0	Pine-apples, St. Michael, each ... 5 0-8 0
— Chancell Islands, per lb. ... 0 7-0 9	Plums, Greengage, per p. bushel ... 8 0-9 0
— Muscats, selected, per lb. ... 2 0-2 6	— Victoria, per p. bushel ... 5 0-6 0
— Muscats, 2nd quality, per lb. ... 0 9-1 8	— Ordinary, in variety, p. bush. ... 4 0-6 0
Melons, each ... 0 9-1 0	
Nuts, Cobs, per lb. ... 0 3-0 2	
— Filberts, per lb. ... 0 2-0 2	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. ... 2 0-0 0	Garlic, per lb. ... 0 2-0 0
Beans, French, per bushel ... 1 6-0 0	Pots, per bushel ... 5 0-6 0
— Scarlet Runner, per bushel ... 1 6-2 0	Salad, small, per doz. punnets ... 1 6-0 0
Cucumbers, home-grown, selectd., per doz. ... 2 0-2 6	Shallots, per lb. ... 0 2-0 0
— 2nd, per dozen ... 0 9-1 0	Tomatoes, selected, per doz. lb. ... 4 0-0 0
Mushrooms (Indoor), per lb. ... 0 6-0 0	— Medium, do. ... 3 0-2 6
— outdoor, p. lb. ... 0 8-0 4	— Seconda, do. ... 1 6-2 0
	— Channel Islands, per lb. ... 0 3-0 0
	Vegetable Marrows, per dozen ... 1 0-0 0

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				PERCENTAGE OF POSSIBLE DURATION.		PERCENTAGE OF POSSIBLE DURATION.	
	Above (+) or below (—) the Mean for the week ending August 21.	Above 42° for the week.	Below 42° for the week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.	More (+) or less (—) than Mean for the week.	No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.
0, 1 +	94	0	+ 190	8 7 +	142	24 9	33	30
1 0 aver	98	0	+ 84	12 1 +	130	19 3	46	33
2 2 +	123	0	+ 157	78 1 +	115	14 1	48	36
3 2 +	137	0	+ 255	124 0 aver	118	13 9	49	39
4 1 +	127	0	+ 219	115 0 aver	114	17 2	44	38
5 1 +	137	0	+ 290	180 3 +	105	17 7	43	41
6 0 aver	105	0	+ 135	21 7 +	130	26 6	39	34
7 0 aver	120	0	+ 216	92 11 +	131	20 6	4	36
8 0 aver	124	0	+ 306	138 4 +	134	25 8	49	40
9 1 -	102	0	+ 85	8 4 +	149	26 0	38	31
10 1 -	109	0	+ 202	57 8 +	142	27 7	35	33
* 0 aver	137	0	+ 361	80 9 +	143	21 3	42	42

The districts indicated by number in the first column are the following:—

- 0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

MUSTARD FOR WIRE-WORM.—I should be very glad if any information regarding Mustard for destroying wire-worms, as advertised in the *Gardeners' Chronicle* for March 6, 1897. How much of the Mustard dress should I use per acre? Also, how much Mustard-powder should be mixed in 4 gallons of water for eradicating worms in pots? *Inquisitive*.

WEED-DESTROYER.—What are the proper quantities of arsenic (poison!), potash, and water, to boil together for destroying weeds on gravel paths, how long should they boil, and what is the correct strength to use liquid at? *Dulwich*.

WATER WEED.—What are the best means of destroying Potamogeton and other such weeds from a lake? *Leaden*.

FIELD MICE.—What is the best method of ridding a lawn of field-mice? They do not appear to take the poisons put down for them. *E. R.*

NOTICES TO CORRESPONDENTS.

BEGONIAS: F. W. The work of a mite, extremely minute in size. Try tobacco-water.

BOOKS: H. G. R. *Vegetable Teratology* (Masters) is out of print. You may possibly obtain a copy from a secondhand bookseller.—*Smith*. (1) *Diseases of Plants induced by Cryptogamic Parasites*, by T. B. T. Smith, translated by W. G. Smith (Longmans, Green & Co.). (2) *Manual of Injurious Insects, and Methods of Prevention*, 2nd edition, by E. A. Ormerod (Simpkin, Marshall, Hamilton, Kent & Co., Ltd.).

BULBS: Ignoramus.—The Frezias should be cultivated in pots in the greenhouse, and may be potted up now. The Narcissus may be put in the ground at once, or any convenient time until end of October. Oxalis rosea will thrive well in a good situation out of doors. Nerine sarniensis had best be potted up for cultivation in the greenhouse. Zephyranthes rosea may succeed in a specially sheltered spot out of doors, but the species prefers greenhouse treatment. Cooperia Drummondii is also tender, but it succeeds in exceptional positions out of doors.

CARNATIONS: O. W. D., and L. G., Malden. Macrosporium nobile, a well-known Carnation pest, is present on all the specimens sent, and is undoubtedly the cause of the trouble. The presence of this fungus is indicated by an arrest of growth of the internodes, resulting in densely crowded and stunted branches. All fragments of diseased plants should be collected and burned, and the healthy plants sprayed with potassium sulphide, to guard against inoculation from the innumerable spores present on diseased plants. *G. M.*—*Enquirer*. Write to Mr. J. Douglas, Edenside Nurseries, Bookham, Surrey.

CHRYSANTHEMUM: G. H. You send a very curious condition in the variety Robert Flowerday, in which the internodes or joints of the stem are much contracted, and the leaves crisped and contorted. It is clearly due to some check to growth, but how caused we cannot tell. It appears, according to your statement, to affect all the plants of that particular variety, and no other.

EXAMINATION BOOKS: W. S. Put not your trust in books alone, but get a few weeks' or, better, months' practical training if possible. As aids, you will find Dr. Sorauer's *Treatise on the Physiology of Plants* (Longmans), very serviceable. If that is too large, then try F. Darwin's *Elements of Botany* (F. Clay & Co.).

GLADIOLI: W. P. The safest and best practice to consistently follow is to lift them each season. Of course most of them are hardy enough to be left in the ground in this district, without suffering injury in an ordinary season. But excessive damp is prejudicial to them, and as a general practice we would advise you to lift and store them as you would Tulips.

GRAPES: S. E. D.—A very curious state of things in which the seedcoats become fleshy and grow faster than the berry which, in consequence, cracks. We usually do not see Grapes in this condition till they are ripe, when the appearance is that of one

or more Grapes arising from the interior of the parent Grape, and so the condition was described and figured. Your specimens show that it is the seeds that become fleshy; we cannot assign any reason for the change.

HORTICULTURE IN MALTA, MADRIRA, AND CANARY ISLANDS: Christian Schmidt. We cannot advise you of any in Malta or Madeira, but you might communicate with the following persons in Las Palmas, Canary Islands:—Victor Perez, Rafael Massuer, Felipe Massuer, and Juan Leon, of Castillo.

NAMES OF FRUITS: C. S. Your Apple is identical with Catahead.—*A. J. B.* Your Peaches were too badly bruised to be identified, which under the most favourable conditions is difficult in the case of Peaches removed from the tree. Plum No. 3 is Lawson's Golden Gage, and No. 4, Guthrie's Late Green Gage. We do not know what caterpillar it may be that is doing the mischief.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*J. H., Kilkenny*. The common Truffle, Tuber aestivum.—*E. A.* The leaves are of the Japanese variety of the common Hop.—*E. S. R.* 1, Clematis viticella; 2, Clematis flammula; 3, Spiraea Douglasi; 4, Lycium barbarum; 5, Picea orientalis; 6, apparently one of the American Oaks—perhaps Quercus coccinea; 7, a Silphium, which we do not recognise; 8, Thalictrum flavum. Thank you for sending such good specimens, but another time please not to send more than six at a time.—*Subscriber*. Valletta purpurea.—*D. P. Mansell*. Another time send to the Editor, not to the Publisher. Your plant is Alonsonia incisa.—*A. H.* Some Zinsiberaceous plant, but which we cannot determine from such meagre leaf specimens.—*T. W.* 1, Stachys lanata; 2, N. 4 recognised; 3, Perhaps the Atlas Cedar. We cannot tell from the piece sent; 4, Viburnum Lantana.

NURSERY FOREMAN: S. T. C. As you were paid weekly and had no agreement, we do not think you can claim a month's notice.

PRIMULA JAPONICA: C. W. D.—The flower stalk, instead of withering, has developed a leaf-bud from its side, as happens occasionally in herbaceous perennials.

RAINFALL: Hydro. .07—1.32—4.11—1.06 and .901.

THE CAPE OR UNITED STATES: W. F. C. We are not sufficiently acquainted with the circumstances to be in a position to advise you. If you emigrate to either place, you should be prepared to turn your hand to anything—for a time, at least.

TOMATOS: A. W. Pollard. The normal number of carpels is 2 to 5. In these specimens, instead of remaining united, some have become detached.

TOMATO A FRUIT OR A VEGETABLE.—From a botanical standpoint, of course, the Tomato is a perfect fruit, just as a Peach is, or a Kidney-bean pod. At the same time, as Tomatos are almost exclusively (though not invariably) used as a vegetable, and with salad, it is found convenient to class them with vegetables, and thus to call them what they are not.

VALLOTAS: Subscriber. See note under "Plants under Glass" on p. 125 of our last issue.

COMMUNICATIONS RECEIVED.—W. O.—G. S. B.—J. A.—H. E.—W. G. S., Edinburgh—J. McL.—N. E.—Br.—G. A. R.—W. T.—J. D.—J. B.—J. D. S. C. de B.—J. R.—Director, Royal Gardens, Kew.—J. C.—J. H.—C. W. D.—W. S. G.—G. N.—T. S. H.—Senex.—W. H. C.—J. O'B.—A. D.—E. Cottam.—T. B.—F. A. & Son.—J. McL.—E. T., Leeds.—Smith (with thanks).—W. H. W.—W. Gardiner.—Storrie & Storrie.—A. J. R.—C. Abbot.—A. Hill.—H. C.—S. H.—C. T. D.—X. Y. Z., and others.

SPECIMENS RECEIVED.—H. W. (next week).—James Veitch & Sons with many thanks.—A. Y. R. (next week).—A. H. (next week).—C. W. D.—E. S. J., Demerara.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the pleasure of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 4, 1897.

THE PARISIAN FIG CULTURE.

THE raising of Figs in the vicinity of Paris is increasing, proof that the industry is remunerative. While in the East the Fig-tree acquires large dimensions, round Paris it is but a shrub. The Fig belongs to a family claiming to have 600 species, that are not easy to class. The ordinary Fig, *Ficus Carica*, is peculiar to the regions of the Mediterranean, where it produces an abundant supply of esteemed food. The tree may be said to grow there spontaneously, and to attain a height of 33 feet. The Sycamore, or Pharaoh Fig, *Ficus Sycomorus*, is peculiar to Egypt and the Levant. It grows to a very large size; its fruit, which is not much prized, is extensively consumed by the Arabs, and its light wood, reputed to be incorruptible, formed the coffins for mummies, and has proved to be well conserved. In Abyssinia the Fig is made into bread, hence the *F. panificus*. The *F. religiosa* produces gum lac, the *F. rubiginosa* yields caoutchouc, or india-rubber; the juice of *F. atrox* supplies Indians with poison for their arrows, *F. variegata* furnishes the vegetable wax of Sumatra, and *F. elastica* is cultivated as an ornamental shrub in Europe.

Only two varieties of Figs are grown in the vicinity of Paris—the Versailles or Madeleine, and the Dauphine. The chief *figueries* are at Argenteuil and La Frette—the latter is famous for its Lilac also. Figs are found in Western Asia, Northern India, Northern Africa, Burmah, Malaya, and Southern Europe. Naturally, its culture exacts great care at Paris during the winter. In winters of great severity that part of the plant above ground is killed, but so long as the frost does not touch the roots, new shoots will be sent up, for the shrub grows rapidly, and is, on the whole, not exacting as regards soil. The Fig prefers a light soil, where sand predominates; an argilocalcareous soil is good, but some varieties thrive well even on humid land, or land that can be irrigated. The main point is to secure a southern aspect, and to protect the plant from the too dry winds in spring, and from those too humid in autumn. It is not averse to poor soils, but those fresh, deep, and fertile suit best. Round Paris such favourable conditions exist. The chief mode of propagation is that from *marcottes* or layers, raised from two-year-old branches, and easily effected, as they rapidly take root. In March they are separated, and planted out. The plant is also propagated from slips, suckers, and grafts, but rarely from seed. The latter, in the South of France, is rather an amusement than a serious business; the seed is uncertain and tedious. Suckers have a tendency to produce suckers. The end ought to be to secure a bush, called

cépée, with five or six stems, from 3 to 7 feet high. In April, the soil having been well prepared, the layers are planted in trenches 21 inches apart, and the same width. Place the layers so as to slope alternately to the right and left, at 12 feet apart; the distance between the trenches varies from 13 to 16 feet. In due course prune, so as to secure vigour for the stems, which will bear fruit from the third year. The bearing branches must not be too numerous. Pinch off useless buds, but leave sufficient for the development of new bearing wood, and leaves to shade the fruit. In the vicinity of the latter, nip off unnecessary buds; this will prevent the Figs from becoming stunted and leathery. The leaves supply shade and mellow the fruits; but if too many, and they rub each other, thin out, as they might in their rubbing scratch and blacken the Figs.

In the South of France, the Fig-tree produces two crops in the year—spring and autumn; however, in the *figueries* of Paris only one crop is raised, that between the end of June and August. In order to hasten the maturity of the Figs, a drop of the best olive-oil from a pointed bit of wood or a quill on the eye of the Fig. This swells the latter, and hastens maturity by seven or ten days, but unless executed by an experienced hand, when the fruit commences to assume a blond tint, which indicates ripeness, the flavour may suffer. For the Paris market the Figs, generally six on each branch, and weighing from 2 to 4 oz. each (I have before me at my *déjeuner* four green and purple varieties of a total weight of 10 oz.), are gathered in the morning before the dew has disappeared. Of course, only green Figs are raised around the capital. Marseilles sends also plenty of fresh Figs during her season, which commences in August; this Provence Fig is small, soft, has an agreeable perfume, and makes an exquisite table fruit. In Smyrna the Figs, when half-dried, are flattened, then placed in sacks in an airy situation, or packed in cases for exportation. The small Figs of Dalmatia and of the Greek Islands are exported in large, rush-woven sack baskets.

Examine the young branch of a Fig-tree in course of elongation: in the axil of each of its leaves is a bud or eye more or less pointed, and accompanied by a small globular body, which is the Fig in its embryonic stage. In due time it develops, till it resembles a little Pear, inclosing in its concavity a large number of grains that are the result of the fecundation of as many female flowers. The Fig contains 11 per cent. of sugar, so more therefore than the Apple or Pear. It is one of the four fruits which, with Grapes, Peaches, and Strawberries, constitute part of the alimentary régime for complaints of the stomach.

How do the Fig-growers round Paris fight the climatic difficulty? About the middle of November, when the leaves drop, and of course the fruit is all gathered, a trench is opened and the stems inclined therein, but so as not to touch; all extraneous vegetable matter is excluded, as its presence could induce decomposition. The stems are next covered with a good 12 inches of the excavated soil, battered down, and sloped from the top like a roof, to throw off the rain. This wintering operation is performed during dry weather. In March, when no severe frosts are to be apprehended, the trenches are opened during foggy weather, so that the soft and humid stems are not too suddenly exposed to sunshine, or to too parching air, and the plant injured thereby. Then level the soil, dig, and weed, and open at the base of

each bush a basin to receive water when deemed necessary.

The Fig plant is only liable to one insect, attacks from the *kermes coccus*. Like all the species of this family, the parasite lives on the sap, causing the leaves to curl up, and the fruit to fall. Scraping the branches with a blunt knife, or rubbing with a rough brush dipped in a solution of soap-and-water, or dusting with flowers-of-sulphur, will get rid of the pest. The price of green Figs in Paris varies from 2 to 5 francs per dozen. *Edward Conner.*

NEW OR NOTEWORTHY PLANTS.

SOLANUM LASIOPHYLLUM, *Dun., in Poir. Encyc., Supp. III., p. 764.*

THIS is a woolly spinous species, much in the style of *Solanum marginatum*, but with purple flowers. Although not in any way remarkable on account of its fruit, the contrast of white woolly leaf and purple flower is very effective; and should the plant prove easily manageable in cultivation, it will probably secure a permanent foothold.

The species is Western Australian, and it ranges from the tropics into the desert, but is not found in the moister south-west corner of the colony. Seeds brought down by myself from the interior readily germinated in the conservatory of a relative, and, thanks to the care of Mr. Stacey, the gardener, flowering began in the second week of August. The seedlings were raised in sandy loam, whence they were transferred to leaf-mould, which suits them admirably, provided it be not watered too freely. In its native haunts, which are sand-patches near granite outcrops, it seeds freely; in the desert, however, it rarely exceeds half a foot or so in height, whereas cultivated specimens are twice as high. *Spencer Moore.*

ORCHID NOTES AND GLEANINGS.

ALDERMAN WILLIAM BOLTON'S ORCHIDS, WILDERSPOOL.

MR. BOLTON in the course of the last few years has erected in an open quarter at the back of his villa residence about thirty span-roofed houses for Orchids, for the purpose of making the crop of flowers pay, as well as for trade and general purposes, and, so far as one can see, he has been fairly successful, with Mr. Cain as his general cultural manager. He has commissioned Mr. Jensen to send him from the rich stores of Pacho the best forms of *Odontoglossum crispum*. He must have quite 50,000 *O. crispum* alone, varying in size and established condition. His houses are low-spans, more than 100 feet in length, and the pitch of the roof is so contrived that lines upon lines of these established plants, closely, but not too closely, set, weigh down the roof-covering. They are mostly grown in perforated pans, and the atmosphere is kept very moist; the result is, that the young growths have great vigour, and the matured bulb, after the trying ordeal of transport, are plumping-up. He has also a more advanced batch, sent home by Carder, to which he attaches great importance, and a large parcel of what might be called a nondescript lot, very vigorous, but of lesser merit. The plants of *O. Pescatorei* are in fair quantity, and contain many fine blotched and spotted flowers. There are also other species, but not of the same commercial value. This batch, in bulk, good and indifferent, will occupy about ten of the low span houses.

In other houses, all of the low-roofed type, are quantities of *Cattleya*. The varied collection of plants of *C. labiata* are sending up young growths with sheaths that promise a plentiful crop in autumn and winter. They are kept in pots of limited size, and the roots clamber over the sides, indicating vigour in the same plane as the deep green leaves with their sheaths both double and single. In these low houses, the sun-beat is tempered by copious

moisture, which, in the height of the growing season, can scarcely be overdone.

There is a grand stock of *Cattleya Trianaei*, which is largely sold in this establishment, both as plants and as cut-flowers for market-purposes. Some of the varieties are very durable, and find their way not to shops only round about here, but in Covent Garden. The low roofs suit this *Cattleya* well, and the grand sheaths, bronzing as they mature, give indication of vigorous flowers. *C. Mossii* is filling up again, and from the various quarters that it comes from give great variety. As it is one of the oldest, so is it one of the best for varieties in colour, varying from light or whitish to intense cerise colouring. Undoubtedly the most popular *Cattleya* we have is *Cattleya Mendeli*. It had its rise in the Manchester district, and was dedicated to Sam. Mendel, who resided in the Whalley Range district. There is a grand batch in several houses here—all about the same elevation—rubbing leaves, so to speak, within a safe distance of the glass-roof. Of course, a three years' culture of imported plants is not a sufficient test of the life of a plant, as we have had many opportunities of witnessing—a long life of an Orchid betokens cultural capacity. It makes a pretty plant, this *C. Mendeli*, when properly handled. Its home has been evidently run-racked, and it behoves all growers to take good care of their plants. What a beautiful thing *Cattleya gigas* is! After seeing Warner's *Select Orchidaceous Plants*, 1st number, we cannot think of calling it *Warcewiczii*! There is evidently a free-flowering strain of it, as observed in the numerous forms in flower here. Then *Cattleya aurea* is not scarce, but we can take all that arrive. The cut flowers of this species fetch higher prices than those of any other *Cattleya* or anything else. There is a nice batch here, and there is a proper way of growing it: suspended it must be and near the glass, if health, life, and good condition are to be maintained. What a lovely-coloured species *Cattleya superba* is! We are evidently learning the way of growing it. It is in fine health and flowering freely in this establishment. The best group we ever saw, both as to growth and flower, was in Mr. Rappart's establishment not far from West Brighton, Liverpool.

Mr. Cain tells me it should not be grown in a highly-heated atmosphere, but that it should be placed towards the glass, and not stunted, particularly atmospherically, of moisture. It is in fine flower, and coming at this season of the year, its brilliant carmine flowers are indispensable where the best things only are wanted. Another capital July and August flowering-plant is *Cattleya Harrisoniana*, the variety of shades of colour, and the size of the individual flower being striking. *Cattleya Gaskelliana* varies as much as does any *Cattleya*, and cannot always be depended upon to come uniformly good year after year; its fragrance is delightful. Another good distinct *Cattleya* is *C. Schilleriana*; the dusky blotches and spots remind one of Oriental colours, and fine plants of it are now cheap in the market. The summer-flowering *C. labiata* Warneri is a very distinct grower, and its flowering season is generally finished before the "old" *C. labiata* comes in. The stock here was much increased last season, and the collectors have sent over good-sized plants of it. It is easily known by the leathery texture of its leaves, and the eyes at the base of the growths being very prominent—more so even than the form which was so much prized, and which for over twenty years was lost, until collectors met with it on fresh ground. *J. A.*

ORCHID PORTRAITS.

CATTLEYA MOSSII, Hook, Cogniaux, Dict. Icon. Orchid., t. 9, July. *C. M. DE M. D. LANGHE*, Cogniaux, Dict. Icon. Orchid., t. 9a, July.

CATTLEYA TRIANAII VAR. *EMISSA*, Lindley, t. DLXX.

CYMBIDIUM LOWIANUM VAR. *FLAVOLIMUM*, Lindley, t. DLXXII.

CYMBIDIUM LOWIANUM, Rolfe, f., Cogniaux, Dict. Icon. Orchid., t. 2, July, 1897.

CYPRIPEDIUM PAULI, a cross between *C. insignis* var. *Chantini* and var. *villosum* Foxall, Lindley, t. DLXXI.

DENDROBIUM VESUS, Rolfe, Cogniaux, Dict. Icon. Orchid., t. 3, July 1897. Hybrid out of *D. Falconeri* by D. nobis.

EPIDENDRUM ELEGANTUM, Cogniaux, Dict. Icon. Orchid., t. 1, July, 1897. Out of *E. Wallisii* by pollen of *E. Endresioi* Wallis.

EPIDENDRUM LEUCOCHEILUM, Klotzsch, Cogniaux, Dict. Icon. Orchid., t. 1, July, 1897.

EPIDENDRUM VIRENS VAR. *GRANDIFLORUM*, Cogniaux, Dict. Icon. Orchid., t. 2, July, 1897.

LELIA TENEBROSA, Rolfe, Cogniaux, Dict. Icon. Orchid., t. 8, July, 1897. *L. TENEBROSA*, M. Lindley, id., t. 8a.

ODONTOGLOSSUM CRISPUM QUEEN VICTORIA, Cogniaux, Dict. Icon. Orchid., t. 1, f., July, 1897.

ODONTOGLOSSUM X CIRRO-HALLI, Lindley, t. DLXIX.

ODONTOGLOSSUM PISCATORII VAR. *IMPERIALE*, Cogniaux, Dict. Icon. Orchid., t. 2a.

ODONTOGLOSSUM WILLCKEANUM, Cogniaux, Dict. Icon. Orchid., t. 2. A natural hybrid between *O. crispum* and *O. luteo-purpureum*. The same hybrid was raised artificially between the species named by M. Leroy, head gardener to Baron Edmond de Rothschild.

ONCIDIUM SARCODES, Cogniaux, Dict. Icon. Orchid., t. 5.

TRICHOPIA SUAVIS, Revue de l'Horticulture Belge, August 1. *VANDA KIMBALLIANA*, Revue Horticole, August 1.

KEW NOTES.

CALCEOLARIA ALBA, figured in a recent issue, is now in flower in an outside border by the wall of the Orchid House at Kew.

Capparis spinosa.—The Caper is not always found an easy plant to grow. There is just now a fine plant in flower in an outside border at the base of the wall of the Economic House at Kew.

Polygonum lanigerum.—This forms a very attractive bed at Kew. It is a perennial, growing 3 to 4 feet in height, with bold handsome foliage, the leaves being lanceolate, somewhat decurved, and covered with hoary down. The plant is a native of the tropics, and will probably not survive the winter without protection; grown as it is at Kew, it forms one of the most effective plants we know.

Echinops albidus is an old, rather than a well-known plant. The foliage, though spiny, is elegantly cut, and of a grey colour, whilst the globular flower-heads are whitish.

Rudbeckia maxima is a perennial now in flower at Kew. It has bold ovate entire glaucous foliage, which alone is striking. The large flower-heads are yellow.

Ipomoea versicolor.—Under this name is to be called in future the pretty climber with one-sided spikes of yellow and red flowers, known as *Mina lobata*. It is now in flower in the herbaceous ground at Kew.

Polygonum baldschuanicum.—There is no question as to the beauty of this species as now seen in the herbaceous ground at Kew, but it is stated to be difficult of propagation.

TRINITY GROVE, EDINBURGH.

SOME four years since your late contributor, "Vagabond," whose promising career was all too short for his friends and our literature, visited the Grove, and chronicled some of the historical incidents and horticultural features of these gardens, mellowed with many memories of the past, and distinguished by many merits of the present. I will proceed to describe a few more of the more prominent features of this exceptionally well-managed and fully-furnished place. The entire area covers some 6 acres, and is surrounded on three sides by walls of considerable height and strength. Those are needful for safety, as well as for shelter, as the demesne is environed by public roads. The Firth of Forth also approaches within a few yards, and the east winds especially roll across the gardens with terrific force, sweeping the heads of the Cedars and other Conifers with such violence as to prevent them from reaching their full stature. At one corner of the ground the house approaches close to, and may be said to form the boundary wall into a yet higher and stronger barrier against the Firth of Forth and the sea breezes. Freezing fogs that often do much harm rise densely, and fall with chilling force over these gardens in the early spring. Similar fogs are more or less constantly hovering over Edinburgh and the surrounding district.

The planners and planters of the grove used every means in their power to build, plant and grow out of their well sheltered garden the scathing winds, the shivery fogs, the bleak, wild inrush of storm and

tempest from the open sea. The oldest, possibly the first, wind and storm-break runs along almost the entire length of the boundary wall facing the Firth. It consists of a high screen of Sycamores, Limes and Ash. These are fine stately trees, with large boles and tops, though they have boldly done battle with the breeze rolling in from the Firth for probably a hundred or more years. There are other stately trees towards the end of the house, as well as the fine Pear and Poplar trees, and others. The Pear is immensely prolific, but specially perishable, so that they must be bottled or preserved, or eaten—no easy matter with such quantities—so soon as ripe, though it has set thinly this year. At other points, shelters of Yew, Privet, Holly, and other trees or shrubs in hedges are used with excellent effect to improve the local climate of well-furnished rosaries and kitchen gardens. Thriving masses of young trees and shrubs are posted where they will prove most effective for shelter, and telling for landscape effects. It is astonishing what cosiness, shelter, variety, and rest may be had out of such gardens as these skilfully laid out and carefully furnished. If once inside, their well-clothed walls of flowers, climbers, fruit trees, &c., their many walks, numerous flower-beds and borders, various grass- and tennis-lawns, make one soon forget his close proximity to the city, the road, and the sea. The long walk, nearly 200 yards long, partly shutting out and partially revealing the kitchen garden, and melting as it were, into the orchard, beget ideas of extent seldom found outside of the largest gardens. The standard Hollies and Rhododendrons of great size and in robust health, the latter in full flower, sufficed to fill the eye and senses with pleasure.

One of the most pleasing charms of the grove is that the beauty of the gardens unfolds itself gradually. The hedge-screens, the groups of trees and shrubs, partly reveal and partially conceal the fire beds and borders of herbaceous plants. The somewhat unique and almost quaint group of glass-houses are the same as those already described. Mr. McKenzie does not exhibit, and therefore he has few new plants or new houses; but the old houses are fully and well furnished. I noticed a fine plant of *Cleodendron Balfourianum* in full bloom, and some good pieces of *Dendrobium nobile* and other Orchids in robust health.

Ferns were also in full beauty. The *Lapageria rosea* was growing like a weed on one of the walls; and the finest and most persistent bloomer of all the Passion-flowers, *P. racemosa*, was a blaze of colour on the flowering racemes from the last year's wood, while the current year's shoots were rushing into bloom. This is without an exception the finest plant of this splendid Passion-flower ever seen by the writer. When, as an old and successful grower of this plant, I ventured to advise him to leave all the old racemes intact, as they would assuredly bloom again after a short rest, a look of incredulity passed over his face, as if he doubted whether he could find room for more bloom than he had already. And probably he was right.

In a small Peach-house and viney at the end of the plant-houses Mr. McKenzie had managed to pack more Peaches, Nectarines, Grapes, upon four stone-fruit trees, and on a few rods of Vines, than is sometimes seen in half-a-dozen glass-houses of four times the size. On venturing to suggest whether he might not be overloading his willing horses, that is, Vines, &c., he cheerfully replied that he thought this the lightest crop he had had, adding, as he proudly and tenderly touched leaf and fruit, "You see how they seem to like it." And assuredly the fine foliage and plump fat buds were models of vigorous health, as much as the crops were of unusual fertility.

The Peaches were Royal George, Violette Hâtive, the Nectarines also, I believe, is Violette Hâtive. The Grapes were Hamburgs, Muscat of Alexandria, and Madresfield Court. In answer to an enquiry as to the latter's conduct as regards cracking, the answer was an emphatic, "No; the heavy crop prevents that!"

The fruit crops in the open were good; Gooseberries especially were giants in vigour, pictures of

at the fruit thinner than usual, owing to biting winds and severe frost of the spring. also thin this season. Plums and Cherries much grown, and Apples still promise a crop; Strawberries were fine, but nearly a year than last year. Early Cauliflowers, peas, and all other vegetables promised well. into a summer-house on the Lawn, we saw capital oil-paintings on the panels of Niel Roses, Constance Eliot Passion-flower, Roses, &c., painted by Miss Thomson, sister of A. Thomson, Esq., the proprietor *ve. D. T. F.*

the arborescent species of North America, for, although it extends over a large area, it is nowhere abundant. This species breaks down the distinctions that were once made to keep the *Pavia* and *Æsculus* separate. It has the characteristic flowers of *Pavia*, but the fruit is prickly when young like the true Horse-Chestnut, and at the same time has the thin valves of the *Pavia*. The flowers resemble those of some forms of *Æ. flava* in colour, but always differ in the long exerted stamens. Another difference in our comparatively small cultivated specimens is to be noted in the bark, that of *Æ. glabra* being rougher and more fissured than in the other.

flowering tree. No tree of its size produces a more beautiful display of flower, or has more striking foliage. It reaches normally 50 to 80 feet in height, but often more. At Invercauld House, in Aberdeenshire, there is a tree which a few years ago was close on 110 feet high. It is seen in greatest beauty when planted as an isolated tree, or in a group six or eight together. In either case, it requires ample space, so that the lower branches may spread out and sweep the ground. The magnificent avenue of Horse-Chestnuts in Bu-hay Park forming the approach to Hampton Court Gardens is famous throughout the country. It is essentially a tree for the park, the

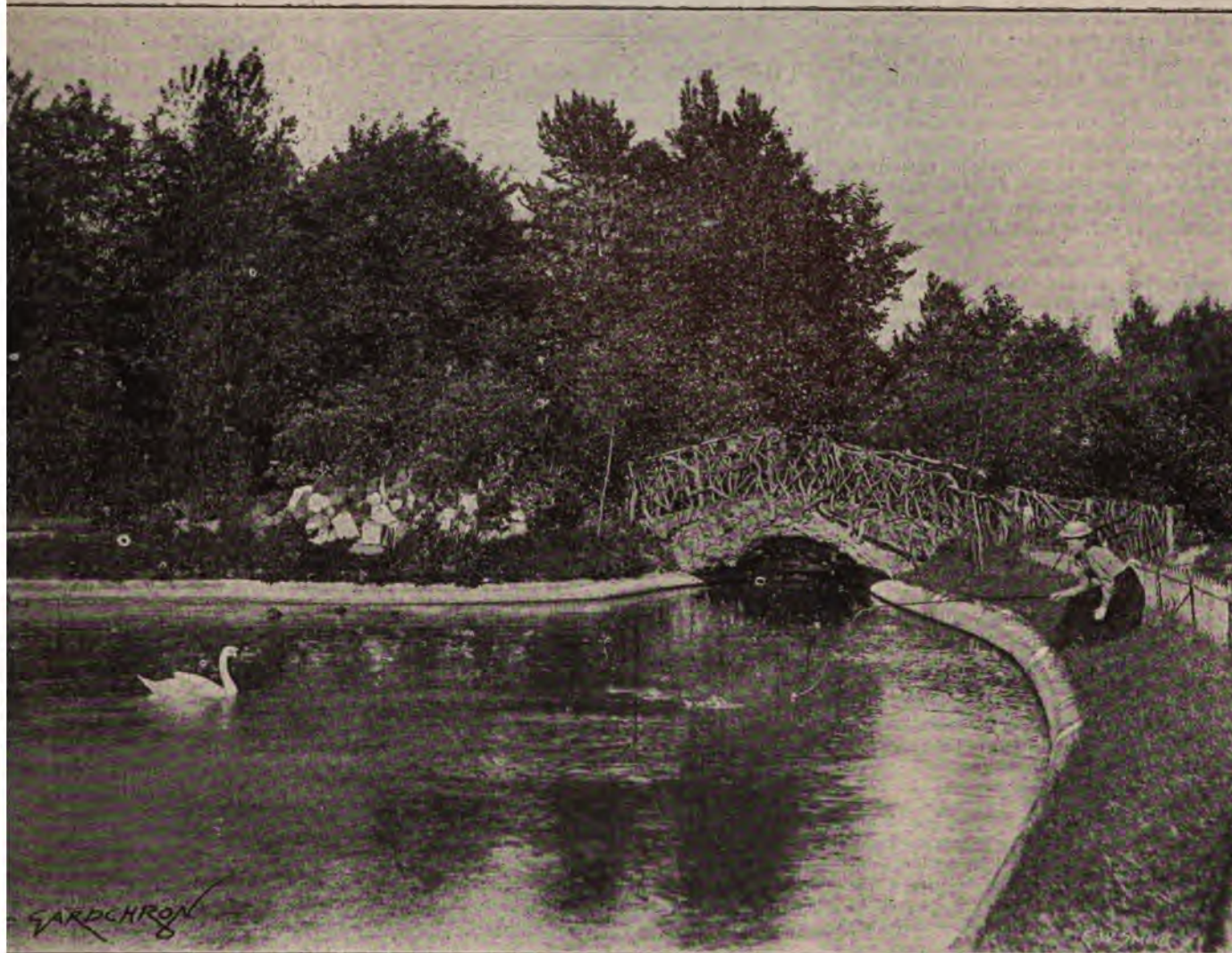


FIG. 45.—VIEW IN THE PUBLIC PARK, WORTHING, SUSSEX. (SEE P. 403, IN OUR ISSUE FOR JUNE 19 LAST.)

HORSE-CHESTNUT AND ITS ALLIES.

(Continued from p. 130.)

BRA (OHIO BUCKEYE).—This is one of the active of the genus, having small racemes of yellow flowers. The leaf has five, six, leaflets, which are obovate, and have a mid-rib and main veins. The name is somewhat of a misnomer, for the leaves are occasionally covered underneath with a pubescence, and it is always present on the mid-rib and in the axils of the veins; however, is never so pubescent as that of *lanceolata*. This *Æsculus* is known as the Buckeye (and in gardens sometimes as *Ohioensis*). It is said to be the rarest of

Æ. HIPPOCASTANUM (THE COMMON HORSE-CHESTNUT).

Until quite a recent date, the native country of the Horse-Chestnut was unknown and merely guessed at. Most authorities gave it as North India, and Loudon attributed it to "Asia and North America," a very comprehensive area, but still incorrect. It is now known to be indigenous to the mountains of Northern Greece, where it was noticed by Sibthorp, and where, at a later date it was found by M. Orphanides to be a true native. It seems to have reached the more western countries of Europe by way of Constantinople, seeds having been sent from there to Clusius, the botanist, in Vienna, about the year 1576. Of all the trees hardy in Britain, either native or introduced, the Horse-Chestnut is the finest when regarded as a

timber being of comparatively little value, although clean straight stems are valued for purposes where a soft white wood is required. There are numerous varieties, among which the following may be mentioned:—

Floris-pleno, whose flowers are of longer duration than the type.

Foliis aureis variegatis.—Leaves more or less of a golden-yellow, which, however, tends to gradually disappear as the trees get older.

Laciniata (syn. *asplenifolia*).—A curiosity, the leaves being cut up into narrow lobes.

Memmingeri.—The entire leaf has a yellowish tinge. *Crispa* has short-stalked leaves, and broader leaflets; the whole tree, too, is of compacter habit.

None of the varieties is superior to the type.

Æ. INDICA (INDIAN HORSE-CHESTNUT).

The first recorded flowering of this species in England was in 1858, in the July of which year it flowered with Mr. C. J. Bunbury at Mildenhall in Suffolk. This tree had been raised from seed sent from Northern India about seven years previously. This species has never become common, because it is not so hardy as most of the genus. Its leaflets are more numerous than in the other species here mentioned, seven to nine of them being produced in one leaf. This character, and the fact of the leaflets being produced on a small, flattened, somewhat crescent-shaped expansion of the main petiole, render it easy to be recognised. Each leaflet is stalked, toothed, dark green, and smooth, the middle and largest one 9 to 12 inches long. The young wood and leaf-stalks have a red tinge. The flowers are white, and produced in rather loose racemes 8 inches long; the two upper petals have a blotch of yellow and red at the base, and the lower ones are tinged with pale rose. This Horse-Chestnut is found in Nepal and other parts of Northern India, at elevations of 8000 to 10,000 feet, where it forms a tree 70 feet high, with a trunk one yard in diameter. Sir Joseph Hooker saw it in 1849, during his Himalayan travels, loaded in spring with its white blossoms, and equalling in beauty the common Horse-Chestnut at home. It flowered at Kew during June last.

Æ. PARVIFLORA.

For small gardens this is the most valuable of the genus. Invariably of dwarf stature, it is sometimes a small tree with a short, single trunk (as in the case of the fine specimen in the Coombe Wood nursery), but more often it is a low bush, greater in diameter than in height, and sending up a crowd of stems from beneath the surface of the soil. Its value is the greater also because it flowers in July and August, or some five or six weeks later than the others, and at a time when flowering shrubs are becoming much scarcer. It is seen at its best, perhaps, as an isolated specimen on a lawn. Its leaves are of the common Pavia type, consisting of three to seven, but usually five leaflets, which are in colour of a deep green. The raceme is erect, long and slender, carrying numerous flowers, which are white faintly tinged with pink. The stamens constitute no inconspicuous feature of the flower, being long and thread-like, and pinkish-white. In spite of its beauty, both as regards foliage and blossom, not to mention its graceful habit, it is a shrub that has been much neglected; yet it has been in cultivation since 1820. It is a native of the South-Eastern United States, and is met with in gardens under the name *Æ. macrostachya*.

Æ. PAVIA (RED BUCKEYE).

This is a dwarf species, most frequently a shrub, but occasionally a small tree. The leaflets are five in number, lanceolate, 3 to 5 inches long, serrate, shining dark green above, paler, and covered with a fine pubescence beneath. The flowers are disposed in short erect racemes, and are of a bright rosy-scarlet, with red protruding stamens. From *Æ. flava* and *glabra* it may be distinguished by its smaller leaves and its more bushy and less vigorous habit. It is, like them, a native of the Eastern United States. There is a form with pendulous branches (*pendula*); both it and the type are suited to positions of limited extent.

Æ. TURBINATA.

In habit and in foliage, this Japanese species very closely resembles the common Horse-Chestnut, but the fruit is quite smooth, which is a characteristic of the Pavias. I have not heard of its flowering in this country, although about ten years ago it flowered and fruited in France (in the Segrez Arboretum). There is a vigorous young tree in Messrs. Veitch's nursery at Coombe Wood, about 12 feet high, and there are several smaller ones in the Kew Arboretum. Whilst the leaves, both in size and texture, much resemble those of *Æ. Hippocastanum*, they may be distinguished by the paler coloured petiole and mid-ribs, and by the leaflets having a more drawn-out apex; each side of the mid-rib, too, is clothed with a short whitish tomentum, and there is little or not any of the reddish-brown wool seen at the base of the young

leaflets of the common Horse-Chestnut. The raceme of flowers is slender, and upwards of one foot long, the flowers being a yellowish-white. The fruits are 1½ to 2 inches in diameter, and slightly pear-shaped. The species is a native of Japan, and was found by Maximowicz in the Island of Yezo, in 1861, at sea level; in more southern Japan it is found at altitudes of 4000 to 5000 feet.

In the *Gardeners' Chronicle*, p. 717, June 5, 1889, there is a figure of *Æ. chinensis*. It is there suggested that it may possibly be the same as *Æ. turbinata*, a suggestion also made by Miquel. A plant under this name was exhibited by M. Lavallée in 1883 before the Central Horticultural Society of France, and a specimen with this name is now in the Kew Arboretum, but it has never flowered. The identity of *Æ. chinensis* is therefore obscure at present. *W. J. Bean*.

THE DISEASES OF PLANTS.

(Concluded from p. 140.)

Treatment of Bacterial Diseases.—Bacteria are said to produce several of the diseases popularly known as "rots." They have been proved to be the direct cause of diseases of Tomato, Cucumber, Carnation, Potato, Pear, and other plants; and they are frequently found accompanying other diseases, assisting them to destroy cultivated plants. In Tomato-fruits and Potato tubers, the disease manifests itself as rotting spots, which enlarge until the fruit or tuber is a putrefying mass; it also spreads rapidly amongst the growing plants, and will soon ruin stored produce. On Carnations and Cucumbers the foliage is first attacked, showing general unhealthiness, probably spotting, and a failure of growth, which results in defective flowers and fruits, if not in the total destruction of the plants. One of the Potato bacterial diseases attacks first the stems and foliage, and spreads thence to the tubers. The Pear disease appears on the bark, where it forms spots with a dark fluid exuding, and as a result the foliage withers and drops off, so that the fruit crop is spoiled. There is, as yet, no reliable fungicide known for bacterial diseases; and treatment can only be effected by careful cultivation. Forcing conditions are favourable to the spread of these diseases, as has been proved with the Tomato, Cucumber, and Carnation. In the case of indoor Carnations, a distinct benefit was observed when the plants were supported on wire-netting, so that the roots alone were watered, the foliage being lightly sprayed only now and then, and afforded as much air as possible. Similar treatment is also found to be beneficial for indoor Tomatoes and Cucumbers. In every case great care should be taken to remove diseased plants, and destroy them forthwith, and to see that houses and frames are kept as clean as possible. It may also be necessary to change the crop to a fresh house, care being taken to use plants from a new source in the new house. As yet it is impossible to say whether any particular varieties are proof against bacterial disease, but it seems quite probable that if the larger growers would make careful observations they would find varieties that are hardy and worthy of cultivation. The nests of Pear or other tree-killing bacteria should be scraped out, and some antiseptic dressing applied to the wound; these dressings will be considered in the succeeding paragraphs.

Treatment of Wound-fungi.—Certain diseases of trees and shrubs obtain a hold on their host-plants through wounded surfaces; space, however, forbids us giving more than a brief note about them, but those interested will find full details in the larger works of Professor Hartig (*Diseases of Trees*, translated by W. Somerville),

and Dr. Carl Freiherr von Tubeuf (*Diseases of Plants*, translated by W. G. Smith). The cultivators likely to suffer from cases of wound-fungi are those who have to employ pruning, i.e., fruit-growers and foresters. The fungi of this class are nearly all nursed on dead material or dying branches; thence they make their way into wounds on the living trees, and spread gradually from branch to branch and from tree to tree. Careful collection and burning of all material likely to act as a nursery cannot be too strongly recommended. Common diseases produced by wound-fungi are the "nectria" canker of Apple and other trees (e.g., Lime and Beech), and the common fungi, known as Polyporeæ, which produce large bracket-like spore-bearing outgrowths on many trees, such as Ash, Birch, Beech, and fruit trees. The "black-knot disease of Plum and Cherry, and the canker of Larch, are related to this group. In Italy the Olive plantations suffer from attacks of a Polyporus, and the growers keep it checked by cutting out the spore-bearing out-growths as soon as they appear, and then scrape the wounds clean. This treatment is the best one for all Polyporeæ, and has been recommended for other diseases, such as "black knot," or the various cankers occurring on trees. Thorough washings with strong solutions of some copper compound before the foliage appears are extremely beneficial. Timely spraying with Bordeaux Mixture or other fungicide is also recommended. Sulphate of iron (copperas) has been suggested, yet the results obtained do not altogether recommend its use; a wash of 4 to 8 lb. per gallon of water may be used, but as it is extremely caustic and injures machinery and clothing, it is best applied with wool or rag mops, and only on the old wood. The most effective method of treating wound-fungi is to dress all large wounds on trees with coal-tar. This is now done by the best gardeners who have to look after trees in parks, and in nurseries where the young trees are pruned into shape. It is therefore recommended as a covering for the larger wounds made by pruning fruit-trees, though it may be neglected in the case of young wood, which soon heals in the natural way. The coal-tar dressing is beneficial because it not only prevents the entrance of fungi into the exposed surfaces, but is also antiseptic, preventing the rotting of the wood, and assisting the perfect healing of the wound. Dressings of this kind are most effective when applied in autumn or winter on fresh-cut surfaces. Their universal use would go far to prevent many of the unsightly scars one sees on fruit and park-trees.

Root Diseases.—These are a common source of trouble to growers of plants. As, however, they are, in most cases, caused by conditions of the soil, or to the attacks of grubs or mites, they require but short notice here. The common root diseases of fungous origin are "Finger-and-Toe," and various forms of bacterial diseases. "Finger-and-Toe," that great enemy of all cultivated plants of the order Cruciferae (Cabbage, Turnip, Wallflower, &c.) is best checked by destruction of diseased specimens, and by a rotation of crops whereby the land is left free from cruciferous plants for some time. It has frequently been successfully treated by addition of lime to the soil at intervals of a few years. This and other modes of treatment have been discussed by various writers in publications available to every one (see the present writer's note in *Diseases of Plants*, Longmans, 1897, p. 527).

Before concluding this series of papers we shall give a few general rules for the treatment of

plants due to fungi :—(1.) Endeavour so that their growth is hardy and soundings as free as possible from any to injure them. (2.) Use clean necessary, clean the seed by the use of mixtures, as already described. (3.) g mixtures are to be effective, they

an attack is far advanced before being observed, then endeavour to save the remaining crop by at once destroying killed portions of plants or whole dead plants. This is a last resource, but it may do much to save fruit or flower ; it may sometimes be assisted by the use of spraying mixtures. (5.) The rearing and use of hardy or disease-proof varieties cannot be too strongly

ERYTHEA EDULIS, AT SANTA BARBARA.

THE accompanying illustration (fig. 46) is taken from the largest specimen of *E. edulis* known out of its native Guadalupe Island. It is growing at Santa Barbara, California, and is said to be over thirty years old. The roundish berries are three-quarters of an inch in diameter, and turn shining-black at maturity, when their pulp contains sugar enough to make them palatable, and better still if stewed like Prunes. This Palm remains comparatively rare in gardens, although it is not less hardy than the common Californian fan-Palm, *Washingtonia filifera*, nearly as fast a grower, and to be sure more graceful in appearance than the same. *Dr. F. Franceschi*.

QUEENSLAND BOTANY.

THE Department of Agriculture, Brisbane, has published a book by Mr. F. M. BAILEY entitled, *A Companion for the Queensland Student of Plant Life*. With this is incorporated *Botany Abridged*. The whole volume has now reached its second edition, and certainly deserves high commendation both for its aim and its method of attaining it. "To smooth the way to a knowledge of botanical nomenclature" is, in truth, a kindly deed. There is no more real difficulty in using correct names than in learning colloquial ones, if only beginners would believe it, since merely custom makes the latter seem easy. Mr. BAILEY strives to show the reason and meaning of botanical terms, and how the classification and nomenclature of plants are based upon the prominent or prevailing characteristics of the species. The information in it is admittedly gleaned from many sources ; large use having been "made of the works of BENTHAM, LINDLEY, HENSLAW, MASTERS, DE BARY, and COOKE," so that its reliability is ensured, and also its general as well as its local utility.

THE ROSARY.

THE WARS OF THE ROSES.

(Continued from p. 118.)

MANY were the searchings of heart when it was announced that the committee of the National Rose Society had chosen Norwich as the site for the last great battle of the season, and its suitability was loudly questioned by many of those who had been accustomed to take part in these battles. There was a howl from the men of the "West Country," who asked, "Are we to be expected to bring our Roses across Eng'land, and have them in good condition on the battle day? Why, we should be like the men who took part in the Jamieson raid, who were so exhausted after 150 miles' ride that they were unable to do anything." The answer to this was two-fold. "The shows had been held in the west, and you have expected the co-operation of East Anglian growers at your shows at Bath, Hereford, and Gloucester, and one remembers that some years ago Mr. Baker, of Exeter, carried off the chief prize at the Norwich show with a box of blooms that excited the wonder of East Anglian growers by their beauty and freshness, while at the western shows many of the East Anglian growers carried off the chief prizes." Objection also was made to Norwich being considered a northern town, but it could hardly be considered a southern one, and so the committee determined that it should for the nonce be called a northern one ; but really, after all, the question of geographical position does not matter so much as the date. In these days of rapid communication, Roses can be taken as well to one part of the country as the other, and the prizes at the northern shows were very often secured by southern growers ; moreover, East Anglia had for so many years contributed so largely to the success of the exhibitions of the National Rose Society, that when it was pleaded that the Society ought to have an exhibition there, the reasonableness of the request was at once recognised, for with such growers as Mr. B. R. Cant, Mr. F. Cant, and Messrs. Prior & Son,



FIG. 46.—ERYTHEA EDULIS, AT SANTA BARBARA.

plied early, and on the first appearance ; particularly all forms of mildew on foliage. Where the disease is expected (e.g. Potato disease), greater care will follow by instituting a regular two or three sprayings each season waiting till the disease appears. (4.) When the disease comes with little warning and assumes a virulent form (as with other bacterial diseases), also Peach and other diseases, where

recommended. To obtain useful disease-proof varieties suited for each class of soil is a thing much to be desired ; it is moreover true gardeners' work and far before the use of fungicides or other temporary means of relief.

Plant diseases due to fungi may or may not be common. It is no part of these papers to discuss this : their object is attained if they enable gardeners to combat or prevent a certain class of troubles to which plants in their charge are liable. *William G. Smith, Edinburgh.*

and such amateurs as Messrs. Foster Melliar, Berners, Orpen, and Page Robert, it would be difficult to find any part of the country where success was more likely to be secured; moreover, Norwich had had for many years a most successful Rose association affiliated to the National Society, and it was felt that its desire to have a national show held there ought to be gratified. The result fully justified the soundness of this decision. A most successful show was held. Exhibitors from various parts of the country came forward, although the chief and most successful exhibitors came from the south, and not from the north. Some of the more southern counties were unrepresented, while, as might have been expected, Norfolk, Essex, and Hertford contributed largely to the exhibition.

This was held in the grounds of Carrow House in connection with the annual flower show of the Norwich and Norfolk Association; it was arranged in five tents, but leaving the miscellaneous collection of plants, flowers, fruits, vegetables, &c., I will only notice the Roses staged in competition for the prizes offered in the National Society's schedule, and chiefly some of the most remarkable points. The weather had for some days previous to the show been very warm, and consequently there was a tendency amongst the H.P.'s to display their charms a little too openly. I think it was a gratification to many who, while wishing well to all exhibitors, saw the Jubilee Challenge Trophy awarded to Mr. B. R. Cant; he was not able himself to do much owing to excessive weakness, but it cheered the old man when his two sons were enabled to wire to him that he had carried off the trophy; not only this, but he secured the principal prizes in the nurseryman's classes. Amongst the amateurs, Mr. E. B. Lindsell was again the champion, having secured the Jubilee trophy and the principal prizes in his division; the Rev. J. H. Pemberton following closely on. The most remarkable feature in Mr. Lindsell's exhibits was his successful exhibit of Teas; he has always been, when at his best, unsurpassable in hybrids, possessing as he does a splendid soil, a good climate, and great experience, and now that he has come forward so successfully in the Tea classes, he will be a formidable antagonist to those who have had it pretty well their own way in this class. Another exhibitor who has stepped boldly to the front is Mr. Charles J. Grahame, and I have no doubt we shall hear more of him in another season. Those from the west, exhibited by Messrs. Townsend, of Worcester, showed that they did not consider distance an insuperable obstacle to successful exhibition. Mr. Orpen, who has made his mark as an exhibitor of Teas, had a grand stand of eighteen, for which he carried off the first prize. It is a matter of wonder to some that Mr. H. V. Machin did not occupy a more prominent position, for both the locality and date were in his favour. The absence of Messrs. Dickson & Son, of Newtownards, was much regretted, for it was hoped that if the north of Ireland was too far off, he might have obtained his flowers from Ledbury; but it was one of those mischances which take place in Rose-growing as in other things.

There is always an interest attached to the Medal Roses, and it is one of the points about which all exhibitors are anxious, and very few but those who have been engaged in the task can estimate the great difficulty of arriving at a right conclusion on the subject. It may be as it is said of the tasters of wine, that when they have tried a number of samples they find it very difficult to distinguish port from sherry; so when the judges have gone through the boxes and selected those which they consider worthy of the honour, they have great difficulty in determining to which of these it shall be awarded. There have been frequently failures—I have seen it awarded to a Rose from which the freshness of colour was gone, and whose chief merit seemed to be its size; while in another instance I have seen a misshapen flower given the Medal because of its brilliant colour—but I do not think that any mistake was made at this exhibition. In the amateur class, that for hybrid perpetuals was awarded to Mr. S. Barger, of Stevenage, Herts, for a well-formed and well-coloured bloom

of Mrs. John Laing, rather undersized for present taste; in the nurseryman's class Messrs. Harkness & Son gained the Medal for a very beautiful bloom of the Earl of Dufferin, which has been exceptionally good this season. In the Tea classes the Medal fell to Mr. Orpen for a grand bloom of Muriel Graham, finer even than that which obtained the same honour at the Crystal Palace show, exhibited by Mr. E. B. Lindsell. Some doubts have been expressed, even by eminent rosarians, as to the value of this sport from Catherine Mermet, for it is said that it was not distinct enough, and would most probably revert to the Rose from which it sported; but when a flower gains at two exhibits of the National during the first year of its distribution two Medals for the best Rose in its class, I do not think there can be much amiss with it. Some of those who once doubted have retracted their opinions, and one of our oldest and most successful growers, in writing to me the other day, said, "You need not be afraid to recommend Muriel Grahame, for it is a perfectly distinct and beautiful Rose." The Medal for the best Tea in the nurseryman's class was to a grand bloom of Niphetos, exhibited by Messrs. Mack & Son, and when shown in such style as this was, its beautiful form, large shell-like petals, and pure colour, claim for it unquestionably the position of the best white Rose in cultivation, notwithstanding that so many have claimed that honour since its introduction more than half a century ago, for it was sent out by Bougère in 1844, and there is probably no Rose which is so extensively cultivated for cut flowers for the London market as this fine flower. Pure whiteness makes it available for both bridal and general purposes, and its staying properties, owing to its thick petals, adds to its value.

When so successful a Society as the Norfolk and Norwich Horticultural Society undertakes the arrangement for exhibition, you may be sure that everything is done that can conduce to the comfort of exhibitors and judges, and the general arrangements of the show, and the thanks of the National are certainly due to Mr. J. J. Coleman for his giving the use of his beautiful park, to Mr. Powell, the energetic secretary, and to the committee, for their valuable aid; and they must have been gratified at the success which attended their efforts.

There is another view of the wars of the Roses which has been started by a leading horticulturist in one of your contemporaries, in which he calls in question much that is connected with the National Rose Society. I think, however, it would be premature to enter upon this subject at present, but I hope on some future occasion to touch upon the matter; in the meantime, let me say that I hope that all lovers of this beautiful flower will do their best to advance the interests of the Society, which has done more to encourage and extend its culture than anything else which has been done during the last twenty-five years. *Wild Rose.*

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 63 to 69.)

5. SOUTHERN COUNTIES.

(Continued from p. 142.)

MIDDLESEX.—The May frosts spoiled what promised to be a record fruit year, as the bloom was magnificent on all kinds of fruit-trees. Strawberries also suffered considerably, most of the early flowers being killed. *S. T. Wright, R. H. S.'s Gardens, Chiswick, W.*

—The long continuance of easterly winds throughout this district caused almost total destruction of Plums. Pears and Apples were also affected, but in a lesser degree. Cherries suffered slightly even on warm walls. From the same cause and cold nights, Peaches and Nectarines on west walls were greatly checked in the earlier stages of leaf development. Strawberries were never a finer crop here, the two kinds standing out most prominently being Royal Sovereign and Latest-of-All. *James Hudson, Gunnersbury House, Acton, W.*

—The fruit crop in this district is one of the worst we have experienced for many years. Apples

and Strawberries have been the only crops of any note; the spring frost killed all the Plums, early Pears, and small fruits. *William Bates, Cross Deep Gardens, Twickenham.*

—Our fruit crop is much under the average. Apples, Pears, and Plums, which promised so well, are a very thin crop; many trees have no fruit, they having suffered from the severe weather when in bloom. Peaches and Nectarines are excellent, and plentiful. Apricots dropped badly after setting. Strawberries were excellent; Royal Sovereign and Latest-of-All being our best. *G. Wythes, Syon, Brentford.*

SURREY.—The following varieties of Apples are fairly cropped:—Stone's, Warner's King, Lane's Prince Albert, Stirling Castle, Mank's Codlin, Blenheim Orange, Wellington, Cox's Orange Pippin, Hornsby's Pearmain. *C. J. Salter, Gardens, Woburn Hatch Lodge, Reigate.*

—A grander lot of bloom I never saw, but most of it was cut off with the frosts in May. Pears on walls have a fair crop. The following varieties of Apples are those bearing the most fruits:—Grenadier, Lady Henniker, Keswick Codlin, Lane's Prince Albert, Lord Suffield, Annie Elizabeth, Red Juneating, Stirling Castle, and Gloria Mundi. *Thos. Ormerod, Ottershaw Park Gardens, Chertsey.*

—The exceptionally severe late frosts injured the crops in many places. In one of our gardens the crop of Gooseberries was almost lost through this cause, while in another part of the garden they escaped, and carried a splendid crop. Apples are without exception a very heavy crop; especially is this so with young trees on the Paradise Stock; the fruit now looks well. *J. P. McLeod, Dover House Gardens, Rochampton.*

—Frost and cold winds prevailed during the time Plums, Apples and Pears were in bloom. Many of the bushes and orchard Apple trees have scarcely any fruit on them. Apple trees in sheltered positions are carrying good crops, especially Lord Suffield, Stirling Castle, Keswick Codlin, Lane's Prince Albert, and a few others. Pears, too, are satisfactory in the most sheltered spots, but where fully exposed to the wind and frost there is no fruit. The blooms on the earliest varieties of Strawberries were destroyed by frost, but mid-season and late varieties escaped. *G. W. Cummins, The Grange Gardens, Carshalton.*

—The extreme drought in the spring, with exceptionally sharp frosts, ruined all fruit crops. Strawberries were blackened, and the crop was of so fine as usual. Of Apples I have scarcely a glimmer. I fear there has not been much encouragement to increase fruit culture on a large scale during the past three years. *A. Evans, Haslemere.*

—Pears and Plums are almost a failure, and Apples also, with the exception of Lane's Prince Albert, Stirling Castle, and Grosvenor. Gooseberries are a medium crop, and the berries very large. Currants were a good crop, but injured a little by blight. *James Walker, Ham, Surrey.*

—Apples are better than we expected a few weeks ago. An old tree of Blenheim Orange is loaded with fruit, but there is not a fruit on the young ones. King of the Pippins bears a heavy crop. In the grass orchard that has been well top-dressed with rich soil, such as road-scrappings and pond-cleanings, &c., until the soil is quite loose and the grass luxuriant, we calculate upon having about a third of a crop. There are many trees that have not a single fruit. The following sorts have rather more than an average crop:—Lord Suffield, Keswick, Mank's Codlin, Quarrenden, Cellini, Minchall Crab, Alexander, Wellington, and Sandringham. In a corner of the kitchen garden, sheltered by some tall Elm trees, the trees will require a good many props. In another orchard, Yorkshire Beauty, Cox's Orange Pippin, and Garibaldi, two rows planted in pits on the grass, have not any fruit. In a cultivated orchard, with only the width of a walk between where Mangolds are grown with the aid of cow-manure, including Messrs. Webb & Sons' artificial Mangold-manure, both trees and fruit have a different

appearance to those planted in pits on the grass. Even in this cultivated orchard we have many blanks; it is quite in the open, with no shelter. The leading fruitful sorts here are Yorkshire Beauty, I may say in full crop, both in rows and single trees. On the grass this sort makes a nice pyramid or bush; in a young state it bears its first fruit on the points of the shoots, which should not be pruned until it makes its natural spurs. With a little attention in pruning, it makes a handsome and evenly-balanced standard. Other sorts in this orchard with anything like a crop are Devonshire Quarrenden and Lord Suffield. There is scarcely a sprinkling of Pears or Plums. All trees with no fruit upon them are being summer pruned with the "Standard Pruner," having two sizes, 6 and 12 feet long. Pears are a thin crop, with the exception of some standards of Beurré d'Arenberg, Beurré Diel, Beurré Bachelier, Beurré Hardy, Beurré d'Amanlis, and Fondante d'Automne. Espaliers of some varieties on sheltered branches are bearing an odd fruit or two. Cordon Pears planted seven years ago, 15 inches apart, are, most of them, 16 feet high, trained perpendicularly. They are fruitful, and appear excellent. By a system of close early pinching of the side-shoots, the trees were brought to a fruitful state early. The first pinching is given when the shoots are about 6 inches long, and is not discontinued as long as there is growth. The trees are upon the Quince stock. Pitmaston Duchesse has been the most stubborn of all to bring into fertility, but this year it shows three fine fruits, and a plenitude of fruit-buds. On a south aspect the following are the sorts that are carrying from two to three dozen fruits each; very few trees have none:—Durondeau has a nice crop, but the fruits are too soon gone; Ne Plus Meuris, and next Pitmaston Duchesse, Knight's Monarch, Glou Morceau, Winter Nelis, Josephine de Malines, and Beurré Rance, all useful Pears, both as to eating and keeping; Jargonelle and Williams' Bon Chrétien, Doyenné du Comice, a grand Pear, Beurré d'Arenberg, a capital keeper and good dessert Pear, and Beurré Diel. On a western aspect there are more blanks amongst the cordons this season. Baronne de Mello, thin; Beurré Bachelier, good; but Nouvelle Fulvie, Magnate, Jolei de Bonneau, Vicar of Winkfield, Beurré Duval, Van de Weyer Bates, Belle Julie, Dr. Trouseau, Duchesse d'Angoulême, and St. Germain, are all blank; Louise Bonne of Jersey has a wonderful crop. *J. Miller, Ruzley Lodge Gardens, Esher.*

SUSSEX.—On May 12 we registered 9° of frost which spoiled most of the bloom on Apples, Pears Plums, and Strawberries, and partly so on Gooseberries and Currants, Walnuts and Apricots, although the latter were given a certain amount of protection. *F. Geeson, Cowdray Park Gardens, Midhurst.*

— Peach trees showed fairly well for fruit, but were attacked with blister and almost killed. Pears generally have a good crop, but trees of Marie Louise are noticeable for very poor crops. The excessively wet autumn last year in this district, I think, had something to do with the poor crop of Strawberries. *Alex. Reid, Junr., Posingworth, Cross-in-Hand.*

— Owing to the ungenial weather in spring most fruits suffered severely. Peaches on the south-east walls were badly blistered. Pears in the open are few, but on walls where protection was afforded there is a fair crop. Cherries, though not more than an average crop, have been very fine; while Apricots, though sadly crippled with the frost, are the best we have had for some years. Strawberries were not a heavy crop, and Royal Sovereign was the best. *H. C. Prinsep, Buxted Park, Uckfield.*

— Never was the prospect for an abundant fruit crop of all kinds better than this year until May 14, when a severe frost effected wholesale destruction, especially amongst Cherries, Plums, Strawberries, and Apples. Lord Suffield, Keswick Codlin, Cox's Pippin, Cellini Pippin, Stirling Castle, Hambledon deux Ans, Reinette du Canada, Ecklinville Seedling, New Hawthornden, Irish Peach, and Old Nonsuch are bearing full crops. *E. Burberry, Castle Gardens, Arundel.*

— The general fruit crop in these gardens is barely an average one, so much of the bloom being destroyed by frost on May 12. The foliage of Peaches and Nectarines suffered very much from blister during the early stages, but the trees are now clean and healthy, and carrying full crops. Plums are very scarce in this neighbourhood; as are Apricots. *Richard Parker, Goodwood Gardens.*

— We had a good show of Apple blossom, but it was injured by the May frosts; in places some trees are loaded; in one of my orchards I shall not get 10 bushels. Pears are very poor, as are also Plums; but all bush fruits were wonderful. *G. D. Duncan, Warnham Court, Horsham.*

WILTSHIRE.—The Apple, Pear, and Plum crop is, I think, the worst I have known during the last thirty-six years. This is due to a large extent to severe frosts in the early part of May, especially on the morning of the 13th, when there were 8° of frost. The fruits and blossoms on all unprotected trees, whether on walls or in the open garden, fell off, or were greatly injured. *T. Challis, The Gardens, Willon House, near Salisbury.*

7. ENGLAND, N.W.

LANCASHIRE.—The fruit crops are very variable; some gardens have no crop of a particular variety or kind of fruit, whilst the same variety or kind is abundant in another garden not distant. Only once in seventeen years has the Pear crop been so poor as it is this year in this garden, the only tree bearing a full crop being Louise Bonne of Jersey worked on the Quince. Another tree near it 40 feet high, on the Pear stock, has scarcely any fruit. *W. P. Roberts, The Gardens, Cuerdon Hall, Preston.*

— The Apple and Pear crops generally in this district are below the average. The unusually severe frosts during the whole of the second week in May killed the blossom, of which there was a great profusion. Being well sheltered, our crops are much better than our neighbours'. Apples bearing full crops are Grenadier, Golden Spire, Mère de Ménage, King of the Pippins, Tower of Glamis, &c. Pears: Doyenné du Comice, Williams' Bon Chrétien, Louise Bonne of Jersey, Easter Beurré, &c. *B. Ashton, Lathom Park Gardens, Ormskirk.*

WESTMORELAND.—Blossom was plentiful and strong, but many succumbed to sharp frosts in May. Amongst Apples, King of Pippins, Annie Elizabeth Northern Greening, Ecklinville seedling, Keswick Codlin, and Fearn's Pippin are loaded. Cherries and Pears are few, but Marie Louise and Doyenné du Comice are good. Amongst Strawberries, Dr. Hogg still keeps to the front; Royal Sovereign, Empress of India, Sir J. Paxton, and A. Nicaise do well. *W. A. Miller, Underley Gardens.*

— The Apple crop looked very promising when in bloom, but the dry month of May and the caterpillar together, in many instances destroyed the crop. The show of bloom on Plum trees upon walls or as pyramids, was very thin. Our best varieties are Victoria, Golden Gage, Early Prolific, and Golden Drop. Strawberries on strong ground were very fine indeed. Our best were James Veitch, Countess, Auguste Nicaise, and Empress of India. *J. Clarke, Lowther Castle Gardens.*

8. ENGLAND, S.W.

CORNWALL.—Apples are an average crop. Pears very few, also Plums, Damsons, and Gooseberries. The cold winds cut the Peach and Nectarine trees very much, and in some cases quite killed them. I never saw trees looking better when in bloom. *W. H. Bennett, Menabilly.*

— The Apple crop in East Cornwall is an average one, and some varieties carry a heavy crop, King of the Pippins, Irish Peach and Blenheim Orange Pippin being the best amongst the dessert varieties; of ordinary varieties, Alfriston, Keswick Codlin, and Bismarck are good. Pears are very poor; cold winds and heavy rains during the blossoming time ruined the crop. I have never seen Peach and Nectarine trees so badly cut. We had strong east winds for

ten days at the end of April, and frequent hailstorms, which, in spite of protection, cut the leaves off in many cases, and spoiled the trees for the season. *Chas. Page, Boconnoc Gardens, Lostwithiel, Cornwall.*

— The fruit crop is the worst I have experienced for twenty years; the trees gave great promise early in the season, but the cold, blighting winds cut them to pieces. I never saw Peach-trees so badly blistered, and some trees were hit so badly that they have not recovered. Many of the large Plum orchards in this neighbourhood are entirely destitute of fruit. *Wm. Sangwin, Treilick, Truro.*

DEVONSHIRE.—The fruit-crops are a comparative failure in this district, though the trees bloomed more abundantly than for years past. This I attribute less to an ungenial spring than to the drought that has prevailed here for some seasons past, and culminated in the dry and burning summer of last year when the rains came too late to enable the trees to recover. They did this sufficiently, however, to put forth an abundant bloom, which exhausted them, for though in many instances the bloom appeared healthy, and to "set" well, the fruit has since dropped, and left but a thin and meagre crop. *A. Eames, Henton Satchville, Bexford.*

— Fruit trees blossomed well with the exception of Plums, and all appeared to have set well, but the cold east wind that was prevalent after the flowering stage, injured Peaches, Apricots, and Pears. All fruit bushes have been heavily laden, also Strawberries, and the fruit was of good quality. *J. Mayne, Bicton Gardens.*

GLOUCESTERSHIRE.—The fruit crops are fairly good, although below the average. Apples are very good indeed; the varieties, Keswick Codlin, Ecklinville Seedling, Warner's King, Peasgood's Nonsuch, King Pippin, and Ashmead's Kernel are the best. Cider fruit is abundant. *G. W. Marsh, Arle Court, Cheltenham.*

— All fruit trees produced an abundance of bloom; and the north-east wind, and absence of sun rather than frost, caused the subsequent failure. Apples and Plums are a complete failure. A few orchards in sheltered positions are bearing a fair crop. This is the first time in seventeen years that Borsdoffer Apple has not had a good crop. *Richard Shore, Berkeley Castle Gardens.*

— The fruit crops are the worst we have had for some years, which is undoubtedly due to the sharp frosts that occurred late in May. *Thomas Shingle, The Gardens, Tortworth.*

HEREFORDSHIRE.—Such varieties of Apples as Ecklinville Seedling, Stirling Castle, Keswick Codlin, Golden Spire, and Tower of Glamis are bearing very fine crops. Dessert varieties are also good, Worcester Pearmain, King of the Pippins, and White Transparent especially so. Pears are a failure, owing to frost, cold winds, and the Pear-midge. Plums are quite a failure, as are Cherries. *C. A. Bayford, Glenstone Gardens, Ross.*

MONMOUTHSHIRE.—The most unsatisfactory crops this year are those of Plums and Cherries, and their poverty may be attributed to the prevalence of cold, dry N.E. winds while the trees were in blossom. Both Apples and Pears are partial, the best crops being in sheltered situations. Upon pyramid trees of Apples there are good crops of the following varieties:—Cellini, Beaumann's Red Reinette, Grenadier, Lane's Prince Albert, Peasgood's Nonsuch, Sandringham, Schoolmaster, Warner's King, Belle Pontoise, Cox's Orange Pippin, and Duchesse of Oldenburgh. Red Currants suffered much from aphids. Strawberries were excellent in every way, Royal Sovereign, Leader, Gunton Park, President, Vicomtesse Héricart du Thury, and Latest-of-All being remarkably so. *Thos. Coomber, The Hendre Gardens, Monmouth.*

— Apples are scarce, the only sorts carrying heavy crops being Golden Pippin, Calville Blanche d'Hiver, Hawthornden, and Norfolk Beaufin. Pears, which were a charming sight in spring, being covered

with bloom from the stem outwards, but are only an average crop. Peach and Nectarine trees are looking remarkably well, and they are carrying heavy crops, which give every indication of swelling to a handsome size. Plums in these gardens are a failure, while Morello Cherries are under the average, but very fair. What fruit we have of Apples and Pears is free from blemish. *W. P. Woods, Llanfrechfa Grange Gardens, Caerleon.*

— The prospects of an abundant crop of all kinds of fruit were never better than in the spring months of this year, the orchard and garden trees being covered with blossom; but unfortunately, in many parts of the county, we have been doomed to disappointment, through the biting easterly winds and frosty nights experienced in April and May. Not only has the Plum crop been almost entirely destroyed, but in many places the trees have succumbed. In my fruit ground at least a dozen strong trees are killed. Cherries are a failure. Pears almost as bad, with exception of Marie Louise d'Uccle and Bon Chrétien. Some trees of those two varieties have fair crops. Apples are very irregular, and very few are to be seen in the grassed orchards in exposed situations. Local varieties grown as standard trees in sheltered positions where the soil has been cultivated and well manured, are carrying very heavy crops of fruit. Several varieties worked on the dwarfing stock, such as Ecklinville, Laue's Prince Albert, Bismarck, Sandringham, Stirling Castle, Keswick, Lord Grosvenor, New Hawthornden, Mabbot's Pearmain, Adams' Pearmain, Cellini, New Northern Greening, Evagil, Hoary Morning, Peasgood's Nonsuch, Golden Spire, Newton Wonder, Frogmore Prolific, and Tyler's Kernel are carrying fair crops. This, however, applies only to garden trees. Gooseberries have been a very heavy crop, some varieties averaging from 20 to 24 lb. per bushel. Of Raspberries, Superlative has proved by far the best. Strawberries are not much grown in this county for market purposes. In the few cases where they are, reports are not good. Upon the whole, I can safely say we are considerably under the average. *John Basham, Fair Oak Gardens, Bassaleg, near Newport.*

SOMERSETSHIRE.—Small-fruits have been plentiful, but the stone fruits are under average, the frost and cold winds having destroyed the bloom. Peaches and Nectarines are an average crop where protected. Apples in sheltered situations are an average crop and large in size, but generally where not sheltered in orchards, there are very few fruits. Pears, a good crop on some of the late trees. *Thos. Wilkins, Inwood House, Henstridge.*

— Apples set very well, but dropped from late frosts, also Pears; a few Pears now carrying fine crops are Vicar of Winkfield, Jargonelle, Beurré Bachelier, and Williams' Bon Chrétien. Plums are almost a failure in the district of Frome, Victoria being amongst the best, and strange to say Green Gages are far more numerous than black varieties. *A. Young, Marston Gardens.*

— During the thirty-five years I have had to do with a garden I have never seen a grander promise for Apples, Pears and Strawberries; but the severe frost in May, just as the Apple bloom was setting, destroyed our hopes. In our garden, Pears as large as one's thumb were turned black and dropped off. Lord Suffield, Domino, and Royal Somerset Apples are the best crop; and in Pears, Winter Nelis, King Edward, and Old Crassane. *John Crook, Forde Abbey, Chard.*

WORCESTERSHIRE.—Taking the fruit crop on the whole, the present season is a disappointing one. It opened, however, with great promise, both Apple, Pear, and Plum blossoms opening strongly, but the disastrous May frosts, coupled with the lengthened period of cold and cutting winds, and a low temperature generally, told its tale on the embryo fruits. The Plum crop is the worst, although in this garden there will be a half crop of Damsons, but in the district there are thousands of trees without a fruit. Apples and Pears are partial, on some trees there are

heavy crops, and on others none. For instance, we have a large tree of Blenheim Orange carrying a heavy crop, and on others there is none. The same with Dumelow's Seedling. That good old local variety Tom Put is carrying a good crop generally. Small fruits good, although in the open fields Black Currants are a poor crop. *A. Young, Witley Court Gardens, Stourport.*

— Apples are a good half-crop, but very partial; trees here and there heavily laden; others a short distance away quite barren. Some of the young, well-cared for orchards, recently planted on this estate, are very encouraging, especially the Codlin types of Apples, showing fine clear fruit. Pears are good, and have clear skins, a fair average crop of nearly all the leading kinds. Perry Pears, too, are abundant. Plums of all varieties are a complete failure: 14" of frost when in flower being the primary cause. Apricots suffered likewise. Peaches and Nectarines on walls had their leaves badly blistered by cold, damp, and by easterly winds. *W. Crump, Madresfield Court Malvern.*

(To be continued.)

TREES AND SHRUBS.

PINUS PARVIFLORA.

As a perfectly hardy, free-growing, and decidedly ornamental Pine, the above species is certainly not sufficiently recognised in this country. It is of comparatively low and spreading growth, with flexible, up-curved branches that are well supplied with foliage. The leaves are in bundles of fives about 2 inches long, slightly twisted, bluish-green on the exposed, and distinctly silvery on the inner, sides. Cones are freely produced, usually several together, each from 2 to 2½ inches long by 1½ inches diameter at the widest part, and composed of hard, brown, widely wedge-shaped scales. Two seeds are contained beneath each scale, these being ¾ of an inch long with a broad wing of the same length, 2,800 being included in 1 lb. weight. The bark is of a light greyish-green colour. In early spring, the beautiful yellow male catkins render the tree highly conspicuous. I have seen beautiful examples of this Pine in the north of Ireland, where they were growing fully exposed on light gravelly loam. *A. D. Webster.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Gathering Ripe Fruit.—Pears and Apples that are ripening [should be gathered forthwith, and placed on the shelves in the fruit-room, care being exercised not to bruise the fruit. In fact, those entrusted with the gathering and storing of fruit should handle them as lightly as possible, to avoid discoloration and decay occurring. One layer of fruits will be sufficient on the shelves, as there is probably plenty of shelf-space at the present time. Among the Apples now fit for storing may be mentioned Kerry Pippin, Lady Sudeley, Worcester Pearmain, Red Astrachan, and Yellow Ingestre Pippin. The varieties of Pears which require to be gathered during the next week or two are Souvenir du Congrès, Clapp's Favourite, Petite Marguerite, Beurré d'Amanlis, and Williams' Bon Chrétien. The fruits part readily from the trees when nearly ripe, a stage of growth which the colour and aroma of the fruit, coupled with a practical acquaintanceship with the characteristics of the several varieties on the part of those engaged in the work, will indicate.

Peaches, Nectarines, and Plums.—Fruits of late Peaches, such as Golden Eagle, Princess of Wales, Warburton Admirable, Thames Bank, Sea Eagle, and Salway, should be exposed to the sun as much as possible, or the colour will be pale.

Autumn Pruning.—Young growths which have been made since the summer-pruning was done, should be shortened back to within 5 or 6 inches of the branches from which they spring. Leading shoots on wall and espalier-trees require to be secured in the spaces which they are intended to furnish,

Thinning the Wood of the Early Peaches and Nectarines.—Trees of Early Alexander, Waterloo, Amadeus June, and Hales' Early Peaches, and Early Rivers and Lord Napier Nectarines, should be pruned forthwith. It is waste of the forces of the trees to leave shoots and branches till the beginning of next year, which ought to be cut out as soon as the fruit is gathered, or as soon after as possible. By thinning the surplus growths, and cutting clean away old spurs, the shoots retained for yielding next year's crop will become better matured.

PLANTS UNDER GLASS

By G. H. MAYCOCK, Gardener, Luton Hoo Park, Luton.

Violets to flower during winter may now be planted in cold frames. The following method has proved to be the best here. Frames in which early Potatoes were forced are used for the earliest plants. The frames are replaced on the old hot-beds, tilted to a sharp angle, and then three parts filled with soil, which is made moderately firm. If the plants were treated as advised on p. 234, vol. xxi., they will lift with a good ball of soil, the whole of which is preserved intact after removing any earth-worms that can be seen. Plant the roots firmly, and sufficiently close to the glass, that when the work is completed the leaves will come within an inch of it. Good soakings of water should be given every few days for the first fortnight, during which time the plants should be kept cool. The lights may then be placed over them, and a covering of Cocoa-nut fibre refuse should be spread evenly over the surface of the soil, and close up to the crowns of the plants. This will impede evaporation and serve the purpose of keeping the flowers clean. Remove all decaying leaves as soon as seen, and give abundance of air on all favourable occasions. Plants to bloom later are treated similarly, but they are planted in brick pits, in the place of wooden frames, the former being more capable of resisting frost. Fire heat, at bottom or top, is never resorted to. The variety Marie Louise will give an early and a continuous supply of blooms. Nespolitan and the double whites yield a late supply.

General Work.—Richardias, Salvias, Abutilons, and other species that were planted out in the spring should now be prepared for lifting when this becomes necessary. To this end, a bright spade should be forced round the side of each plant a few inches from the stem, according to the size of the pots it is intended to place them in. Keep the points of Chrysanthemums and other plants tied, as occasion requires. Advantage should now be taken to cleanse any structure that was not cleaned last spring; it being much more easily done before the plants are housed than afterwards. Obtain a stock of bast mats and other protecting material in good time.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Higholere Castle, Newbury.

Turnips.—Late crops will require to be thinned, and the land stirred so long as the leaves of the plants do not meet across the spaces; and all weeds destroyed. Autumn sowings being prone to make spindly growth and poor bulbs if allowed to become crowded in the smallest degree, hence the need of timely and severe thinning. Always use the hoe after thinning, pulling up large weeds and removing them from the land to prevent their growing again. If the late sowings have not been made, or they have failed to grow, sow seeds of a quick-growing variety forthwith on the chance of a mild autumn occurring. Early Milan is a variety which, if sown at this date, will quickly form roots, and it is tender eating, but not a long keeper when left in the ground, although if lifted and stored when large enough for use, it remains in good condition for a long time. To keep Turnips in store they should be embedded with their tops free in slightly moist earth, in a cool light cellar or shed. Some of the Swede Turnips for table use are more delicate in flavour than the ordinary type, and very hardy, and seed may also be sown at this date.

Kidney Beans.—An abundant sowing of some varieties of Kidney Beans, of the Ne-plus-ultra type, should be made in pits or frames at about this date. It may not always be necessary where this follows another vegetable crop to put fresh soil into the pit, &c., it sufficing simply to clean and level the soil and draw drills 15 inches apart and 3 inches deep, sowing the seeds thinly. If the bed of soil is very dry, it should be copiously afforded water two days before the sowing is made. The lights should not be used before frosts threaten, and then only at night. This crop will be a valuable one to follow Scarlet Runners and French Beans cut off by early frosts.

Seed Gathering and Clearing off Old Crops.—Take advantage of dry weather to harvest ripe seeds of Peas and Broad Beans, thrashing them out and thoroughly drying them in the sun before storing them in the seed-room, or they may be left in the pods till a wet day affords the opportunity to get the job done. It is good policy to endeavour to perpetuate or improve a selected stock of any kind of vegetable by saving a small quantity of seed each year, only the best plants being selected as the seed-bearers. It is not advisable for a gardener in a private place to save seeds on a large scale, this being done much better and cheaper by the professional seed-growers. The remains of vegetable crops of all kinds should be cleared off the quarters without delay, as not only is the land impoverished by their being retained, but the space they occupy can be more profitably employed for growing Coleworts, Asparagus, and Buda Kale. This last is a capital spring vegetable, being late in running to seed, and coming into use at a time when other vegetables have become scarce.

THE ORCHID HOUSES.

By W. H. WARR, Orchid Grower, B. rford, Dorking.

Cool-houses.—The *Lycastes* are in full growth, and until the pseudo-bulbs are fully completed, the plants will require a plentiful supply of water. Keep them well shaded from the sun. The present is the best season to overhaul the *Masdevallias*. Some of the more vigorous plants will require additional root-room; others that are healthy, and have sufficient space, will only need to have the old soil picked out and fresh compost substituted for it. Large masses that have overgrown the edges of the pot, and become bare in the centre, may now be safely divided and re-made into compact specimens; or, if for trade purposes, they may be broken up into small pieces and potted separately. For the stronger-growing plants, as *M. Veitchiana*, *M. Lindenii*, *M. macrura*, *M. ignea*, *M. Chelouii* × *M. cucullata*, *M. amabilis*, *M. corniculata*, *M. peristeria*, *M. coriacea*, *M. Ehippium*, *M. Gargantua*, *M. elephanticeps*, *M. Fraseri* × the yellow *M. Davisii*, and the numerous forms of *M. Harryana* (occinea), pot-culture is preferred. These *Masdevallias* are deep-rooting plants. After several experiments, I find that they grow stronger and produce a greater number of blooms when potted into deeper compost than usual. Those who do not grow their *Masdevallias* satisfactorily, I would advise to try this method, and at the same time to select pots that are in proportion to the size of the plants—the object being to lessen the amount of shallow-surface rooting-space, and to induce the roots to grow downwards into the soil. Secure good drainage by placing a hollow piece of crock over the hole at the bottom of the pot, and just cover it with a layer of smaller pieces; then add a thin layer of sphagnum-moss, and for the rest make use of peat and moss in equal proportions. Carefully work the soil in amongst the roots, placing here and there a moderate-sized crock, to assist the escape of water. Pot moderately firmly, and keep the base of the plant about on a level with the rim of the pot. After the plants have been repotted, afford them one thorough watering, but until the roots have had time to get a firm hold again, afford just sufficient to keep the surface of the compost moist. Such treatment should be continued throughout the winter months. In early spring, when growth recommences, the plants should be kept thoroughly moist. Such dwarf-growing varieties as *M. Stella* ×, *M. Gairiana* ×, *M. Courtauldiana* ×, *M. Henrietta* ×, *M. Shultzyana* ×, *M. caudata* Shuttleworthii, *M. calura*, *M. Rolfeana*, *M. infracta*, *M. triangularis*, *M. Tovarensis*, *M. Schroderiana*, *M. inocharis*, *M. fragrans*, *M. melanopus*, *M. maculata*, *M. Parlatoresana*, *M. racemosa* Crossii, *M. Reichenbachiana*, *M. rosea*, *M. torta*, and many others, when intermixed with the stronger-growing kinds, are not easily observed. It is a good plan, therefore, to erect a lattice-work stage at one end of the house, placing it on a level with the foliage of the larger plants. In such a position the plants are nearer the light, which is very important, and where they may be more closely examined. All of them grow well in pots. Other dwarf species, which form pretty tufts when in bloom, are *M. Armini*, *M. Wagneri*, *M. hieroglyphica*, *M. floribunda*, *M. muscosa*, *M. picturata*, *M. Wendlandianus*, *M. triadactylites*, *M. simulata*, *M. Estrata*, &c. These plants, if house-room be limited, may be suspended to the roof in small shallow pans; in such a position they do very well in winter, but during the heat of summer they thrive best when placed down upon the stage with the other dwarf varieties. *Masdevallias* are comparatively cool-growing species, and during the summer they succeed with the *Odontoglossums*; but if, after root-disturb-

ance and through the winter, they can be afforded a few degrees more warmth than the *Odontoglossums* require, they will thrive luxuriantly. The pure white *M. Tovarensis* should not be repotted now unless the compost has become sour, or the plants are in a bad condition at the root.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Hydrangeas.—These comparatively hardy shrubs make a good show in shrubby borders, and if it be desired to increase the stock, cuttings may be readily struck at this season. *H. paniculata grandiflora* and *H. hortensis* are both equally useful, the former for planting in beds over a suitable carpet, and the latter for facing the shrubbery. Cuttings should be made from the points of half-ripened shoots, and be inserted singly in pots of light sandy soil, and placed in a frame on a slight hot-bed. The top air should be kept somewhat cool, and if a little bottom-heat can be afforded, roots will form quickly. Plants so raised may be flowered in pots the next season, and will produce one strong flower-head, after which they may be planted in the borders if desired.

Veronias in several species may be similarly propagated. *V. Traversii* is a free, whitish-flowered species, that quickly grows into a large and handsome bush.

Pentstemons.—Notwithstanding the late dry weather, seedling and other *Pentstemons* have made a strong growth, and are flowering freely. Where propagation from cuttings of select named varieties or choice seedlings is carried out, the young growths now springing from the base should be used for this purpose. The cuttings when made should be inserted to the number of four or five round the sides of large 60-sized pots, filled with sandy soil, and stood in a close frame. Seeds may also be sown at this date, and the seedlings kept in a cold frame and protected from severe frosts, to be planted out early next summer.

Verbena beds are full of flower, and to keep them in this condition as long as possible, the seed-vessels should be removed as soon as the flowers drop. If it is desired to increase any varieties from cuttings, they will strike readily if placed in pots of sandy soil and stood in a close frame, or plunged in a frame having a slight bottom heat.

Aubrietia Edgings.—As a substitute for Box edging in the flower and herbaceous gardens furnished with gravel-paths, the close-growing *Aubrietias*, as *deltoides græca* or *Campbellii*, are useful. Such an edging has advantages which Box does not possess, for during a portion of the year it is a mass of bloom, and it is less trouble to keep in order. The present time is a suitable one for planting new, or for cutting back established edgings. The trimmings from the latter make excellent material for the formation of new borderings. The ground should be prepared similarly as for Box-laying, treading the soil flat and firm, and planting with a line. The soil edge should be chopped down squarely 2 or 3 inches nearer the path than the line of plants, which the *Aubrietia* will quickly cover.

General Work.—Remove faded flowers and decaying leaves from the flower-beds, doing the work if possible when the foliage is dry. Dahlias should be disbudded if large blooms are required, and the growths made secure with bast. Many of the perennial Sun-flowers are now at their best, and note should be made if any of the clumps require to be divided; yellow flowers not being allowed to preponderate over other colours, and some of the varieties, as *H. letifolius*, increase so fast as to require partial removal annually. Lawn-grass is growing fast, and weekly mowings will be necessary. The sweeping and rolling of gravel-paths after rain should have due attention.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Peaches and Nectarines.—The trees in the early houses must not be permitted to lack water at the root, either at the present time or through the autumn or winter, dryness of the soil being one of the chief causes of bud-dropping. I have noticed that it is almost always the earliest trees which suffer the most from this vexatious malady, water being withheld owing to the pressure of work, or want of thought. An occasional heavy syringing overhead will likewise tend to keep the foliage healthy and free from insect pests. As fast as the fruits are cleared from the trees in late houses and wall-cases, thin out the shoots that have carried fruits, so as to let in the sunlight to the current season's wood. Go over the

trees in bearing, and remove all foliage from around the fruit, either cutting it off or putting it aside, affording air freely by day, and closing the house at night, the air commencing now to get damp and chilly. Protect the fruits from wasps, either by covering the trees or the window-openings, &c., with fine netting.

Vines.—What has been stated about the borders of Peach-trees applies equally to the earliest vines, which must not be neglected after the crop of Grapes has been removed, but they must be afforded clear-water alternately with manure-water of various kinds. Advantage should be taken of the indraining of rain-water into the manure-water tanks, to employ it upon the inner borders in liberal quantity, first ascertaining if the borders are in need of moisture. I have carried on this practice for three successive years at this season and during the winter, with the result that the Vines have been wonderfully improved. Vines carrying ripe Grapes, and the latest Vines, must be protected from wasps and flies, and from injury by decaying berries. Great care must be used in damping-down and ventilating, doing less of the former, and affording a small amount of air at the top, but no air at the front of the vineries at night, and assisting the circulation of air in the vineries by maintaining a slight degree of warmth in the heating-apparatus. Remove all redundant growth from Muscat Vines, and thus let in the sun to the bunches, so as to bring up the colour of the Grapes.

THE APIARY.

By EXPERT.

The Super-clearer or Bee-escape.—No appliance of recent years has rendered more help to beginners in bee-keeping than that known as the super-clearer. It is well worth while for everyone who keeps bees to pay especial attention to the proper working of this little appliance, since by its use honey may be removed without the slightest risk of giving annoyance to neighbours, no matter how near. It needs but to rise early before anyone is about, set on the clearer, and at night lift the honey off and carry it indoors without disturbing a single bee. Always use a little smoke when taking honey, and be careful to carry all racks of sections and surplus chambers indoors as soon as cleared of the bees. Allow no broken pieces of comb with honey to be lying about, and take every precaution to prevent robbing being started. Bear in mind that as soon as the honey income fails, and the bees are being deprived of their stores, they naturally begin to attack weak hives, and robbing once started is difficult to stop.

Extracting.—Shallow frame-boxes full of combs should not be removed till wanted for extracting purposes. The honey keeps better on the hive than in the house; at the same time, no extracting should be deferred longer than can be helped after the honey is sealed. Special care is required in handling newly-built combs heavy with honey in hot weather, especially if they are not built down to the bottom bar of the frames. The bees should in these cases be brushed off the combs with a feather—not shaken off as is usual. Always return frames to the hives after extracting in the evening, and let them be placed in the same hives and in the same position they filled before the honey was removed. A little care in handling honey indoors will keep the bees from trying to enter the house. When excluder zinc has not been used, queens are occasionally found in supers while clearing them of bees. A look-out is therefore necessary to see that she is not thrown on the ground at a distance from the hive and lost. Frames from which the honey has been extracted should be given back to the bees to clean up before being packed away for the winter; always do this in the evening, as it excites the bees a good deal, and they have time to settle down before the morning.

Removing Honey.—Notwithstanding the recent glorious bee-weather, the end of surplus gathering for 1897 is rapidly nearing a close; indeed, except in heather districts and in the far north, the season is now virtually over. All surplus-honey may therefore be removed. Nothing will now be gathered over and above what may, with real and wise economy, be left for the bees' own winter stores. Unsealed sections and shallow frames should be removed and extracted at once, as no sealing will now be done, and the honey will be taken down to the bottom of the hive if left on longer. In some seasons, bees are irascible and mischievous when being deprived of their stores, and unless an apiary is kept quiet and free from the wild disorder we sometimes meet with, a great deal of annoyance may be caused, not only to the bee-keepers themselves, but to neighbours as well.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	SEPT. 4	Société Française d'Horticulture of London, Meeting. Isle of Wight Horticultural Improvement Society's Meeting.
TUESDAY,	SEPT. 7	Royal Horticultural Society's Meeting. National Chrysanthemum Society's Early Show.
WEDNESDAY,	SEPT. 8	Royal Caledonian Horticultural Society's Show, Edinburgh (three days). Derbyshire Agricultural and Horticultural Society's Show, at Derby (two days).

SALES.

MONDAY,	SEPT. 6	Unreserved Clearance Sale of Ferns and other Plants, at the Ealing Park Nursery, Windmill Road, Brentford, re W. B. Southce, deceased, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	SEPT. 7	Clearance Sale of Palms, Ferns, Camellias, Azaleas, &c., at The Rose Nursery, High Street, Clapham, by order of Mr. G. B. Fletcher, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
WEDNESDAY,	SEPT. 8	Sixtieth Great Annual Trade Sale of Winter-blooming Heaths, at the Longlands Nursery, Sidcup, by order of Messrs. Gregory & Evans, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	SEPT. 9	Third Great Sale of well-grown Palms, Foliage and other Plants, at the Kew Nursery, Richmond, S.W., by order of Mr. K. Drost, by Protheroe & Morris. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	SEPT. 10	Second Annual Trade Sale of Heaths, Roses, &c., at the Mill Lane Nursery, Cheshunt, by order of Mr. E. Roebford, by Protheroe & Morris. Imported and Established Orchids, at Protheroe & Morris' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—59°.

ACTUAL TEMPERATURES:—

LONDON.—September 1: Max., 62°; Min., 48°.
PROVINCES.—September 1: Max., 65°; Min., 55°.

A FEW years ago a mysterious disease appeared on the Vines at Chiswick and elsewhere. At that time little or nothing was known of the real nature of the disease; but, shortly afterwards, some researches of MM. VIALA and SAUVAGEAU were made public, from which it appeared that the "browning" (*brunissure* of the French) was due to the presence of a slime-fungus, or myxomycete, closely related to that which produces "finger-and-toe" in the roots of Crucifers. Later researches of M. DEBRAY and others showed that the slime-fungus is by no means confined to the Vine, but occurs on plants belonging to many different natural orders, including Rosaceous fruit-trees, indeed that it may be considered as likely to invade any plant under favourable conditions.

M. E. ROZE, in the *Bulletin of the Mycological Society of France*, t. xiii., p. 154, recently published, gives further details of the nature and mode of growth of the parasite, which is henceforth to be known as *Pseudococcis vitis* of DEBRAY. ROZE detected its presence in the tubers, as well as in the leaves of the Potato; that the "plasmodies," or masses of protoplasm of which the fungus consists, might remain dormant in the tubers during the winter, to awaken to new life in the haulm and leaves in the following spring. The fungus was culti-

vated in various ways and on different plants by M. E. ROZE, who also succeeded in inoculating with the fungus several previously healthy plants.

Thus minute fragments of Potato infected with the disease were introduced by inoculation into the seeds of Lupins at the commencement of germination, and when the cotyledons were unfolded, blackish spots bordered with orange became visible, and, when examined microscopically, showed the plasmodies of the fungus. In other cases it sufficed simply to water the soil in which various seedlings were growing with water known to be contaminated by the fungus, although the effects were not there so rapidly apparent as in the case of direct inoculation.

In cultivating the fungus it was found necessary to subject it continuously to a moist atmosphere; for where the contrary condition prevails, the plasmodies do not make their way into the stem and leaves, but become encysted on the surface of the soil, forming cysts of an orange colour sufficiently large to be seen by the naked eye. The warmth and moisture of our vineries and forcing-houses, then, are conducive to the growth of the fungus, and M. ROZE even notes its existence in the Orchid-houses, where it attacked the foliage of various species of *Angreum*, *Calanthe*, *Cymbidium*, *Lycaste*, *Odontoglossum*, *Oncidium*, and *Phalaenopsis*.

Again, we frequently see cuttings of *Pelargoniums* after a time rot off from below upwards without appreciable cause. We have generally attributed the disease to too deep insertion of the cutting, or too deep planting when planted out. The observations of M. ROZE render it probable that this condition is sometimes due to the presence of a slime-fungus.

For the benefit of those of our readers desirous of investigating the disease for themselves, it may be pointed out that the plasmodies, otherwise difficult to see, are rendered visible by the agency of chloro-iodide of zinc, which brings out the characteristic orange colour of the plasmodies and its contents.

Our knowledge of the life-habits of the fungus is so imperfect that anything like a cure is not at present within our reach. As we have said, the conditions favourable for the development of the fungus are those which are also propitious to the Vine or other plant grown under glass. Destruction by fire of affected plants, or at least of the parts known to be affected, is the only thing that can be recommended with confidence. Possibly future experiments may reveal some means of killing the fungus without injury to the host-plant.

CATTLEYA WARSCIEWICZII "MRS. E. ASHWORTH."—Colour variations in *Cattleya Warscewiczii* of any importance are more rare than in any of the other large-flowered *Cattleyas*; and forms of the albino class, in which the colour is almost entirely suppressed, are extremely rare, and consequently very valuable. When we regard the frequency of such forms in *Cattleya labiata* *Trianaei* and other varieties of *C. labiata*, and the endless variation shown by it (which is so great as to render the flowers of very few of its representatives exactly alike), the circumstance is all the more remarkable and significant in regard to taking *C. Warscewiczii* out of the true *C. labiata* class in which some authorities have placed it. *Cattleya Warscewiczii* "Mrs. E. Ashworth" (fig. 47, p. 163), exhibited by ELLJAH ASHWORTH, Esq., of Harefield Hall, Wilmslow, Cheshire (gr., Mr. HOLBROOK), at the Royal Horticultural Society, July 27, 1897, when it received an Award of Merit, is one of the most beautiful of the forms of the species which have yet appeared, being entirely of a clear blush-white, or very

pale Peach-blossom tint, the only other colour in the flower being a soft yellow tinge at the base of the lip, and an almost imperceptible lilac-coloured spot on its front. This fine novelty was purchased some years ago with ordinary varieties of *C. Warscewiczii*, all freshly imported, by Messrs. JOHN COWAN & Co., of Liverpool.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the fruit and floral committees of the Horticultural Royal Society will be held on Tuesday, September 7, in the Drill Hall, James Street, Victoria Street, Westminster, from 1 to 5 P.M. A lecture on "Pitcher Plants" will be given by Mr. H. J. VITCH, F.L.S., at 3 o'clock.

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.—The August part of the *Journal of the Royal Horticultural Society* (vol. xxi., part i.), contains the official list of the Victoria Medallists, and reports of the various papers read before the Society since March last. Professor MARSHALL WARD's paper on the mode of cultivating and observing microscopic fungi is entitled "Microscopic Gardening." It is interesting, as showing the methods adopted by microscopists to identify the fungi and study their life-history. Some of the way-marks of modern progress are mentioned, which will be of great service to the student; thus, it was not until 1864 that DE BARY proved the penetration of the fungus-tube of *Phytophthora* into the Potato plant. Mr. WILLIS' paper on the employment of artificial manures is also full of interesting matter, important to all gardeners. An official list is given of varieties of Apples and other fruit which are for exhibition purposes to be considered as for dessert or for culinary use, as the case may be. The list is, of course, quite arbitrary, but for the sake of avoiding confusion it is desirable to have a standard list like that here given.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We have received the following letter from Mr. G. J. INGRAM, Secretary to this Institution:—

"The Committee, Treasurer, and Trustees acting on behalf of the members and subscribers of the above Institution, with the concurrence of its President, the Duke of Westminster, recently forwarded through the Home Secretary a loyal and dutiful address to the Queen, for forty-six years the gracious Patroness of the Charity, congratulating her Majesty on the completion of the sixtieth year of her beneficent reign, and I have now received the following reply from the Rt. Hon. Sir Matthew White Ridley, M.P.

COPY.

SECRETARY OF STATE. WHITEHALL, S.W.
HOME DEPARTMENT. August 24, 1897.

SIR,—I have had the honour to lay before the Queen the loyal and dutiful Address of the Gardeners' Royal Benevolent Institution, congratulating her Majesty on the completion of the sixtieth year of her reign, and I have to inform you that her Majesty was pleased to receive the same very graciously.

With reference to the application for permission to make use of the words: "Victorian Era" in connection with the title of a Fund now being raised by the Institution, I have to acquaint you that her Majesty graciously approves of the desired permission being granted.

I am, Sir, your obedient servant,
(Signed) M. W. RIDLEY.

G. J. INGRAM, Esq.,
Secretary to the Gardeners' Royal Benevolent
Institution, 50, Parliament Street, S.W.

MR. G. W. CUMMINS.—Many of our readers will learn with regret that this well-known Surrey gardener intends to relinquish his post at The Grange Gardens, Wallington, which he has filled to the satisfaction of his employer for a period of sixteen years. Both master and man have to deplore the death of their respective wives, and as Mr. CUMMINS tell us, "a gloom has apparently been hanging over the place," and he would like to obtain another appointment in a healthier locality, and where the land is better adapted for good gardening than that at The Grange. Mr. CUMMINS has been a successful cultivator of hardy fruits, Orchids, Ferns, and exotic plants generally.

CARNATIONS.—We have received some beautiful blooms of Carnations from Messrs. LAING & MATHER, Kelso-on-Tweed. They were cut from outside beds, and the quality of them is commendable. Besides



FIG. 47.—CATTLEYA WARSCEWICZII "MRS. E. ASHWORTH." (SEE P. 162.)

some well-known varieties of selfs and yellow-ground Picotees, a few of the newer ones are represented, and more than one promising seedling. We congratulate our North Country friends upon being able to gather such flowers from their borders at this date.

"KEW BULLETIN."—The last number of the *Kew Bulletin*, dated December, 1896, has only lately been issued. It completes the tenth volume, and the editor has availed himself of the opportunity to give a summary of the contents of the ten volumes. It is well known that Sir WILLIAM HOOKER, on being appointed Director in 1841, made it one of his chief objects to promote what is now called economic botany, and to aid in the development of the resources of the colonies. His relations with foreign and colonial botanists were exceptionally extensive and intimate. By their means he was enabled to establish the museum of economic botany, to inaugurate the series of colonial floras, and generally to lay the foundation and erect much of the superstructure which has rendered Kew the centre of economic botany. Sir JOSEPH HOOKER took up and extended his father's work. His extensive travels necessarily brought him into contact with colonial authorities, and his own unwearied labours enabled him, even in the midst of constant official duties, to produce monographs on the *Floras of New Zealand and Tasmania*, whilst it is but a few months since he brought the *Flora of British India* to a close. From the point of view of commercial botany, the most important development of recent years has been the establishment of "botanic stations" for the purpose of supplying trustworthy information on the culture of economic plants, and of facilitating the introduction or exchange of valuable plants. There are now nine such stations in the West Indies (the first dating from 1886), five on the West Coast of Africa, and one in Fiji. All or most of these are manned by gardeners trained and selected for the purpose at Kew. The considerable proportions that the colonial fruit trade has assumed are largely due to the initiative or to the suggestions from Kew. The rubber industry has been fostered, and in two years rubber was exported from Lagos to the extent of nearly £400,000. The scientific work of Kew has not been neglected, new plants have been described in large numbers in the *Bulletin*, and plant diseases have received much attention. An index to the ten volumes greatly facilitates reference, and serves to illustrate the activity that reigns at Kew in departments of which the great mass of the public know nothing.

"THE ASA GRAY BULLETIN."—We have received from the editor (Mr. GILBERT H. HICKS) a copy of this bi-monthly journal, which contains an illustrated article on "Passion Flowers" and other matter. We find in it notes on "Our Native Orchids," and various observations on botanical matters.

"MALADIES DES PLANTES AGRICOLES."—M. ED. PRILLIEUX has published, through Messrs. FIRMIN-DIDOT ET CIE. (WILLIAMS & NORWATE, London), the second volume of his treatise on the diseases of agricultural plants, fruit and forest trees. It is devoted to parasitic fungi, of which descriptions and illustrations are given. In this publication, as in most other French works of similar character, DUCHARTRIE is credited with having discovered the virtues of sulphur as a cure for Vine mildew. The date given is 1850. We have not the means of referring to DUCHARTRIE's paper, but we think it most probable the eminent French botanist took the suggestion from JOHN KYLE, the English gardener, who described his use of flowers-of-sulphur as an antidote to the Vine mildew (*Oidium Tuckeri*), in the *Gardeners' Chronicle* for July 22, 1848. Mr. BERKELEY, who described the fungus in these columns (see the issue for November 27, 1847), always credited KYLE with the discovery of the remedy. The synopsis of the genera given by M. PRILLIEUX will be very serviceable to the student who from any cause has a difficulty in referring to

larger and more detailed volumes. A table of contents and an index add greatly to the value of this excellent book, which we commend to the notice of our readers.

AGRICULTURAL RETURNS OF GREAT BRITAIN, AS REGARDS FARM CROPS, 1897.—The Board of Agriculture affords the following preliminary statement for 1897, compiled from the returns collected on June 4; and comparisons with previous years:—

Crops.	1897.	1896.	1895.	1894.
	Acres.	Acres.	Acres.	Acres.
Wheat	1,839,161	1,693,557	1,417,483	1,927,962
Barley	2,035,790	2,104,764	2,166,279	2,095,771
Oats	1,036,056	3,095,488	3,296,663	3,253,401
Potatoes	564,914	563,741	541,217	504,451
Hay from Clover and Rotation Grasses ...	2,286,261	3,171,066	2,303,431	2,121,991
Hay from Permanent Pasture	1,509,977	4,637,923	4,760,074	4,851,759
Hops	50,863	54,217	58,940	59,535

COMPARISONS WITH 1896 AND 1895.

Crops.	Increase.		Decrease.	
	Over 1896.	Over 1895.	Under 1896.	Under 1895.
	Acres.	Per ct.	Acres.	Per ct.
Wheat	195,204	11.5	471,678	33.5
Barley ... ..	...	...	68,974	3.3
Oats ... ..	...	...	39,432	1.9
Potatoes ... ..	...	...	58,827	10.4
Hay from Clover ...	114,295	5.3	...	...
Hay from Permanent Pasture ...	...	...	127,946	2.8
Hops ... ..	...	...	3,354	6.2

"THE RECORD OF THE ROYAL SOCIETY."—The Royal Society has published a small volume devoted to the record of its institution and history and to be considered as the complement of the *Year-books* recently issued. The information given herein is, avowedly, principally historical, and has been brought down to the present date. An account will be found in the Record of the Royal Society's various charters, statutes, benefactors, and trusts. Present members will be interested in the biographies and portraits of former Presidents and other officers of the Society. Among the more familiar names we notice those of Lord BROUNCKER, Sir JOSEPH WILLIAMSON, Sir CHRISTOPHER WREN, Sir JOHN HOCKINS, and SAMUEL PEPYS. This latter celebrity was elected President of the Royal Society in 1684, and remained in that office about two years.

ACREAGE OF HOPS.—A preliminary statement compiled from the returns collected on June 4, 1897, showing the acreage under Hops in each county of England in which Hops were grown, with a comparative statement for the years 1896, 1895, and 1894, will be found in the following table, supplied by the Board of Agriculture:—

COUNTIES.	1897.	1896.	1895.	1894.
	Acres.	Acres.	Acres.	Acres.
Berks ... ..	...	4	...	11
Gloucester	40	49	38	39
Hants	2,303	2,494	2,875	2,911
Hereford	6,542	6,895	7,553	7,525
Kent	31,661	33,300	35,018	35,520
Mosmouth	2	...	...	...
Salop	129	140	150	140
Suffolk	2	4	10	17
Surrey	1,416	1,623	1,783	1,931
Sussex	5,174	5,008	7,459	7,589
Worcester	3,591	3,800	4,024	3,848
Total	50,863	54,217	58,940	59,535

LONGEVITY OF SEEDS.—Botanists, who have reason to revere the name of de Candolle, will read the following note with sympathy, not only for its intrinsic interest, but also as the production of one of the fourth generation of this famous botanical family. M. AUGUSTE DE CANDOLLE, who now writes to us, is

the great grandson of AUGUSTE PYRAMUS DE CANDOLLE, who died in 1841. "With reference to M. Ca. NAUDIN's paper on the longevity of seeds and their preservation in the earth, referred to in a recent number of the *Gardeners' Chronicle*, the following facts may be of interest. Some time ago, I was put in possession of some earth which had been dug up in Peru, near the Amazon River. Less than four days after the earth had been placed in two large germinating pans in a hothouse, a species of grass began to spring up, which proved to be *Eleusine indica*, Stead., and of which I subsequently counted over a hundred plants. I also detected *Vandellia crustacea*, Benth., a Spurge, and a species of *Verbenaceae*, perhaps new. These species all flowered and produced seed in due course. No doubt, with proper care, and had the *Eleusine* been kept down, many more distinct species might have been reared. *Aug. de Candolle, Geneva.*"

WHEAT CROP OF THE UNITED STATES.

The latest published returns forwarded to us from Washington may thus briefly be summarised:—The condition of winter Wheat (81.2) is 2.7 points higher than in June, and 5.6 points higher than in July of last year. The range is from 110 in the States of Maryland and Virginia, to 40 in Illinois. There are seven records of over 100 out of fifteen; the others range from 92 downwards. Spring Wheat condition is given at 91.2, or 1.6 points higher than in June, but 2.1 lower than in July of last year. The average condition of spring and winter Wheat combined (84.9) is 1.5 points higher than that of the corresponding period of last year. As to the condition of the crops at the close of July, the reporter says:—

"The average condition of spring and winter Wheat combined, 84.9, is 1.5 points higher than that of the corresponding period of last year. The reports with regard to winter Wheat in New York are, on the whole, excellent, the last month having been exceedingly favourable. From Pennsylvania they indicate a full normal crop. In Maryland the weather has been very favourable, and the crop prospects are very good. In Virginia the harvest is practically over, the crop has been secured in good condition, and so far as reported, it is of unusually good quality. In Kentucky the crop is said to be the best for years. In Ohio the crop has matured finely nearly all over the State, and the quality of the Wheat is reported as excellent. In Michigan the conditions have been less favourable, the entire stand being, with very few exceptions, thin on the ground. In Indiana the quality of the Wheat is said to be very fine, and promising a heavy average weight per bushel. Measured by bushels, however, it will not be more than two-thirds of an average crop. In Illinois an improvement during the month is reported, and the quality of the grain harvested promises to be very fine. In Missouri the crop has headed out better than was expected a month ago. In Kansas no material change of condition is reported. In Texas the weather conditions have been favourable, except quite locally. In California harvesting is now under full headway, the conditions having greatly improved during the month of June. In Washington and Oregon the conditions are greatly improved, but in the latter State more rain is needed to insure a normal yield.

"In regard to spring Wheat, the crop seems to have held its own in Wisconsin very well, notwithstanding unfavourable conditions. In Minnesota the conditions have been in the main unfavourable, but less so in the Red River valley than in other sections. The Iowa crop has been unfavourably affected by cold and dry weather. In Nebraska the conditions have been improved by recent rains, and are, on the whole, very good. The same is true in North Dakota."

THE MASSACHUSETTS HORTICULTURAL SOCIETY was incorporated in 1829 "for the purpose of encouraging and improving the science and practice of horticulture." The chief means by which this end has been sought are horticultural exhibitions, the library, and lectures and discussions on subjects connected with horticulture. Among these the library stands prominently as a source of scientific and practical information on horticulture, yet it is felt that the actual usefulness of the library is less than its possibilities. The library appears to have attained an extent and value exceeding that of any other horticultural library in this country, and excelled by few in the world. Though only members of the society can take out books for home use, all who desire are cordially invited and welcomed to consult its books in the library-room, and all such will find a great convenience in its central location—at Horticultural Hall, No. 101, Tremont Street, Boston.

METROPOLITAN PARKS AND OPEN SPACES.—The London County Council "Red Book" for the year 1896-97 was issued recently—the annual report of the General Purposes Committee. It has many interesting features, not the least being the action devoted to the caretaking of the public parks and open spaces during the past twelve months. From this we learn that the Parks' Committee exercise control over seventy-nine open spaces, with an acreage of 3,685, as against forty such spaces with an acreage of 2,656 inherited from the deceased Metropolitan Board of Works. The Committee has continued its beneficent survey of London with a view to further acquisition, as opportunities arise, to satisfy existing or prospective needs. The Council has, during the past year, assisted the acquisition of recreation grounds in poor and crowded districts—a wise assistance—this in Bermondsey, Walworth, Hoxton, and Islington. In the outlying and more favoured districts of Hampstead and Sydenham, open spaces which were threatened have been preserved, in view of the approach of bricks and mortar, and no doubt wisely. One would wish, it is stated, that the natural boundary of our county would be a belt of green spaces, providing ample ramparts of fresh air. Misapprehension of the committee's intention in regard to works on Hampstead Heath has probably been by this time allayed. Not a ruthless vandalism, but an æsthetic solicitude has prompted the committee to plant for the future, so as to preserve the picturesqueness of the present, while it has treated the gorse, says Dr. COLLINS, with a reserve worthy of LINNÆUS. It would be idle to follow the Reports into the works now being done in one or other of the parks, &c.; they are all taking to maitiation, pleasures, and health-giving recreation and amusement; and the youth of to-day are fortunate in being so earnestly and intelligently catered for in all that concerns physical and intellectual development.

VENTNOR UNDERCLIFF HORTICULTURAL SOCIETY.—The sixty-second show in connection with this Society was held on Wednesday, August 25, in Ventnor Park. Three large tents were filled with fruits, flowers, vegetables, and plants. The Isle of Wight Horticultural Improvement Association Certificate was awarded to Mr. A. RICHARDS, gr. to J. JESSOP, Esq., Bonchurch, for an exhibit of vegetables. The other principal prize-winners were Messrs. G. WITT, J. WOODS, S. COTTON, D. DAY, J. BASTININI, W. TAYLOR, W. HEATH, F. ATTRILL, SHREATH and NIBLETT. Messrs. PERD & SONS stage 1 some blooms of Gloxinias and Tuberous Begonias and leaves of Caladium.

THE ENGLISH ARBORICULTURAL SOCIETY HELD THEIR ANNUAL MEETING AT LYNN.—This Society was founded at Hexham in 1880, with about half-a-dozen subscribers. The number has yearly increased, and it has now upon its roll something like 420, with headquarters at Haydon Bridge, Northumberland. Its object is to promote the cultivation of trees and shrubs. Mr. F. W. BEADON is president and Mr. JOHN DAVIDSON, secretary and treasurer. On Wednesday, August 18, a journey was made to Castle Rising Hall, the seat of Sir HORACE FARQUHAR, M.P., and thence to the Sandringham estate of the PALACE OF WALES, who provided the party with luncheon in the splendid club-room at Wolferton, which his Royal Highness has provided for the benefit of the inhabitants. A long time was spent in inspecting the trees. In some respects, owing to the inclement weather, the visit was disappointing. Upon leaving Sandringham, a drive was taken to Houghton, the property of the Marquis of CHOULMONT, where the party was deeply interested in the magnificent avenues of Beeches, and in several remarkably fine specimens of Cedars of Lebanon. Lord DE GREY AND WILTON provided tea for them. The annual dinner at night at the Globe Hotel, Lynn, proved a very happy and social reunion. On Thursday, when the weather was perfect, the excursionists went to Holkham Hall by the kindness of the Right Hon. the Earl of LICHFELD, K.G., Lord Lieutenant of

Norfolk. This trip was almost exclusively one of business, and was much enjoyed. A luncheon was provided by his lordship for the party. The last day of the session (Friday)—another showery day—was devoted to Melton Constable, the seat of Lord HASTINGS. Several places have been suggested for next year's meeting, and Balmoral appears to be the most favoured. *Times*.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY'S SHOW, SEPTEMBER 8 AND 9.—This important event, as we learn at the moment of going to press, is likely to be one of the finest displays ever seen in the Waverley Market, the Jubilee Prizes exciting keen competition among exhibitors from all parts of the kingdom.

PUBLICATIONS RECEIVED.—*Favourite Flowers of Garden and Greenhouse*. The 49th number of this reprint is now ready.—*Dictionnaire d'Horticulture et de Jardinage*. This has now reached the word "Schizocasia."—*Annales Agronomiques*, 25th Juillet.—*Le Chrysanthème*, Journal de la Société Française des Chrysanthémistes, August 1.—*Buletino della R. Soc. Toscana di Orticultura*, July.—*Die Botanischen Institute der freien und Hansestädte Hamburg*, Von Dr. A. VOIGT.—*Die natürlichen Pflanzenfamilien*, Supplement and Index to part ii.—iv.—*Transactions of the Massachusetts Horticultural Society for 1896*, Part II.—*Meehan's Monthly*, August, contains articles on *Pentstemon barbatus* and horticultural subjects generally.—*The Botanical Gazette*, June (Chicago, Ill.), contains: "Further Observations on the Myxobacteriaceæ," by ROLAND THAXTER; "Life History of *Lilium Philadelphicum*," J. M. COULTER; "Pollen Tubes of *Zamia*," H. J. WEBBER, all finely illustrated, and various notes and reviews.—*The Botanical Gazette*, July, contains: "Notes on Zygomycetes, Syncephalastrum, and Syncephalia," R. THAXTER; "Development of the Antherozoids of *Zamia*," H. J. WEBBER; "Mexican Fungi," E. HOLWAY; "Movements of Diatoms," W. M. KOZLOWSKI; and briefer articles.—*Transactions of the Massachusetts Horticultural Society for 1895*, Part III., being a list of accessions to the library during the year.—*The Forester* (Princeton, New Jersey, August).—*Bulletins from the United States Department of Agriculture*. Division of Entomology: The Use of Steam Apparatus for Spraying, L. O. HOWARD; The Asparagus Beetle, F. H. CHITTENDEN; Insect Control in California, C. L. MARLATT; The San José Scale—T. COCKERELL. Division of Soils:—Electrical Method of Determining the Temperature of Soils—MILTON WHITNEY and LYMAN J. BRIGGS; and Electrical Method of Determining the Soluble Salt-contents of Soils—MILTON WHITNEY and THOS. MEANS.—*Sooty Mould of the Orange and its Treatment*, by H. J. WEBBER. A most carefully written and illustrated Bulletin (No. 13) on this pest, issued from the U.S. Department of Agriculture.—*Cassell's Saturday Journal*. The holiday number is a double one, and contains an unusual amount of attractive literature.—*The World of Adventure* (Cassell & Co., London, Paris and Melbourne). The new penny issue of this thrilling periodical will be appreciated by all boy-readers.—*Journal of the Horticultural Society*, Vol. XXI., Part 1, August.—*Favourite Flowers of Garden and Greenhouse* (FREDERICK WARNE & Co., Bedford Street, Strand), Vol. IV., Nos. 51 and 52.

HOME CORRESPONDENCE.

RARE CONIFERS.—I was delighted to find, amongst hosts of uncommon trees and shrubs, at Emmetts, Ide Hill, Sevenoaks, the newly-acquired and charmingly situated estate of F. Lubbock, Esq., two Conifers, fully developed specimens of which I had not seen before. These were the upright Silver Fir (*Abies pectinata fastigiata*), and the inverted branched spruce (*Picea excelsa inverta*), the former about 45 feet, and the latter fully 30 feet high. Many little-known forms of coniferous trees are looked upon as monstrosities, and particularly so

those in question; but if I am favoured with and you will reproduce the illustrations of those that I have been promised, your readers will agree with me that both are well worthy of being cultivated. It is very interesting to find such rare conifers in little known and out-of-the-way places, but, as I have before pointed out, this is the rule and not the exception with coniferous trees. I saw the Japanese Yew (*Cephalotaxus pedunculata*) growing well by the lake margin, amongst many other uncommon Conifers, at Trentham, thus confirming what I have before pointed out, that a still, damp atmosphere is conducive to its well being. A. D. Webster.

ENGINEERS AND SURVEYORS AS GARDENERS.—In the *Contract Journal* for August 11, I notice that the body known as the "Incorporated Association of Municipal and County Engineers," has been holding its annual meeting in London this year, when, as usual, it discussed subjects within and without its own province. The municipal engineer has—or ought to have—plenty to occupy his mind in his own sphere, without attending to matters which should be dealt with by members of a different profession. I am afraid these gentlemen, as a rule, are inclined to believe that everything connected with a municipality should be under their entire supervision and management, and they would make themselves responsible for more than they could attend to. These opinions are strengthened by reading in the above-mentioned journal one of the papers which the members of the Association are reported to have listened to during the meeting then held. The paper is entitled "The Laying-out of Parks, Recreation-Grounds, and Open Spaces," which, as may be imagined, when delivered in connection with an Engineers' Association, is a very poor attempt indeed. The old axioms, such as "No two walks should run parallel with one another," "For every curve there should be some apparent reason," are trotted out as if only now discovered. Nurserymen are indicated as being opinionated in regard to the planting and growing of trees, and the "author" gives them several lessons, which, it is to be hoped, will benefit them. Why do city engineers, as a body, regard themselves as landscape gardeners? Is it because they believe it to be an art in common with the making of roads, sewers, and such like, or is it because they are of opinion that it is a phase of surveying? Whatever the reason, the sooner they give up these ideas, and leave the laying out of public parks to men who are better qualified to do it, the better it will be for the general public, and the reputation of city engineers in general. All that any engineer has a right to do with the laying out of a public park is simply in marking off the boundary, and executing the erection of any railing or buildings that may be required. As to the position and form of walks, or the kinds of trees, shrubs, &c., to be used, such matters should be left to the landscape gardener, who, being familiar with this work, and with the trees, is the right individual to carry out such work. *Practical*.

TROPICAL FRUITS.—It is surprising we do not see more tropical fruits in the markets. What would attract more attention at large dinner-parties during Christmas-time than a dish of Custard Apples or Avocado Pears? They would add the variety and change so much needed, the flavour is so unlike that of our own native fruits. The two fruits mentioned I can recommend as being very palatable. The Melon-Pear, frequently seen two or three years since, has not gained favour in this country. The Loquat (*Eriobotrya japonica*) I am not acquainted with. I had a large plant, but was not successful in fruiting it. I should be interested to know if it has produced edible fruits in this country [often]. W. H. Clarke, Wellington, Somerset.

MUSCAT OF ALEXANDRIA GRAPES AT SHREWSBURY SHOW.—I think the following particulars will be of interest to some growers of Grapes, more especially of the Muscat of Alexandria. The bunches of this variety that obtained the 1st prize at the show, were taken from Vines not cultivated in the ordinary manner, and Mr. Neild, the Curator of the Cheshire Horticultural College, who exhibited them, informed me that the eyes were put in during March, 1896, and after becoming well-rooted, they were planted in the vine-border. These Vines made very strong growth, and had covered the roof and back wall by the autumn. The rods were cut back in the winter to about 3 feet in height, and this season each one was allowed to carry one bunch, which came to about the same size in each case as those that were shown at Shrewsbury,

viz., 4½ lb. to 4½ lb. each. Considering that only eighteen months have elapsed since the eyes were put in, I think this is a very unusual feat in Vine culture. The Vines have made exceedingly strong growth, and give great promise for another year. *J. R.*

THE PARSLEY-LEAVED BRAMBLE.—Your correspondent, "A. D.," does not give this useful variety its due amount of praise. I have grown it for years on the poorest sandy ground, which is almost useless for anything else, the roots being, however, heavily mulched every winter, and every year the plants have borne an enormous crop of fruit; in fact, it is for the space it occupies the most valuable fruit that I grow. The best bearing row is on a trellis 8 feet high, running east and west; the heaviest crop is naturally on the south side—but the north, which gets no sun, bears and ripens a good crop also. Of all the fruits we grow it is the only one which has never failed, whatever the character of the weather. The present is perhaps the worst fruit year we have ever had, but the Parsley-leaved Bramble bears, as usual, an enormous crop. Any of your readers who are near me would do well to see the result obtained on nearly useless land. I have counted forty-eight good large berries in a single cluster. *Thos. Fletcher, Grappenhall, Cheshire.*

MR. HARRISON WEIR AND HIS GARDEN.—It is all very well to advise, but, as a rule the only garden worthy of the name is that which has been a garden for at least a generation. Some fifty years ago, when I was a small boy, I commenced operations with a Potato, which I rooted up every few days to see how it was getting on. This, of course, proved a failure, and unfortunately discouraged me for a time. Learning by experience, results became more satisfactory, but still, for a time they were not much better. I had not learnt the value of patience, and that takes a long time to learn. The first thing is to find a suitable spot, and this is not easy. The best man in the world is hampered if he can only get a flat field with a barbed-wire fence; the place must be ready made for him, the trees must be of good size, and he must succeed someone else. Few gardens can be made in a lifetime, and in any case, a good deal of knowledge is required. Given an old crooked garden, all ups and downs, or as an acquaintance puts it, "very unflat," much can be done; but neither Mr. Harrison Weir nor anyone else could have made such a place as is shown in the photograph, unless his predecessor had planted trees, and Nature provided crooked places and big stones. A collection of fowls can be got together in a year, but a collection of fine trees is the work of a lifetime. One of the worst features of the some fashionable gardens is the bedding-out, which leaves the flower-garden bare and miserable-looking for half the year; it is much better to arrange the beds so that they are never without something of interest. As a basis for this the old-fashioned border of herbaceous perennials is necessary, with spaces between where annuals and half-hardy plants can be sown or planted, and the ground may be largely planted with bulbs, which grow and die away at various seasons, and are let alone year after year. As truly stated in the *Gardeners' Chronicle*, some weeds are desirable, and such native plants as Foxgloves, wild Roses, to grow wild in the hedges, Harebells, Geraniums, Blackberries, Bulrushes, even fungi on rotten tree-roots, and that abominable weed, the wild Convolvulus, if kept down with a strong hand, all add a charm, in their proper places. In the general arrangement of the garden, certain points are necessary: for instance, the entire garden should not be in sight from any one point; the variety of the plants grown should be as great as possible; and last, but not least, every day in the year, without exception, there should be something of interest for all comers, and good flowers be also always available. This means, of course, some amount of glass, but very little of this is really needed. *Thos. Fletcher, Grappenhall, Cheshire.*

WATER-WEED.—In answer to an enquiry by "Lexden" as to the best means of destroying Potamogeton and other such weeds in a lake, allow me to say that if he will get a pair of swans early next year, he will find that Potamogeton at least will never again reach the surface of the water. Swans will eat many water-plants, but not Polygonum amphibium, one of the most difficult of water-pests to get rid of. *R. Irwin Lynch.*

THE MIRABELLE PLUM (*versus* PRUNUS MYROBALANA).—In the admirable lecture on Plums delivered by Mr. Pearson at the meeting of the Royal Horticultural Society on August 24, allusion

was frequently made to these Plums in regard to their suitability for stocks, &c. Some confusion seems to exist as to what is meant when the Mirabelle or Myrobalana are named, the lecturer seeming to consider them one and the same, whereas they are as distinct as two Plums can well be. The former—the Mirabelle—is a small round early yellow Plum, very useful for cooking purposes. It is not much grown in this country; why, I do not know. In France it is much esteemed. I have seen it at Ferrières grown in pots and laden with fruit. As a stock for the Plum this Mirabelle is, in fact, not used, and does not appear suitable. In Dr. Hogg's *Fruit Manual* it is correctly described, the following synonyms, Mirabelle blanche, Mirabelle jaune, Mirabelle Perle, Mirabelle Petite, Mirabelle Vicuna being given. With regard to the Prunus Myrobalana: this is not grown usually in this country as a fruit tree, but as a stock for the Plum, as an ornamental flowering tree, and as a hedgerow plant. It is one of the earliest trees to blossom, being frequently in full bloom in the end of January. Owing, no doubt, to this early flowering, it seldom bears fruit, although I have flowered trees of this Plum for nearly half a century; and fifty fruits would about represent the total crop for the whole of that period. The fruit is below medium size, roundish, with a nipple at the apex, skin pale red, flesh pale, acid, adhering to the stone, stalk long, slender, like a Cherry. A very poor cropper. A very good description of it is given in the *Fruit Manual*, in which it is stated that it may be used more in the dessert as an ornamental variety than for its flavour. The following synonyms may be noted—Cherry, Early Scarlet, Mezer Plum, Virginian Cherry. *A. P. B.* [In some parts of Kent Prunus Myrobalana is fruiting heavily this year, whilst other Plums are very scarce. *ED*]

A SOUTHERN COUNTIES CARNATION SOCIETY.—"An Old Florist" is evidently endowed with the same quality that quasi-clairvoyants habitually have, viz., inaccuracy. Moreover, as is usual with such extremely 'cute critics, he hides his identity under anonymity and endeavours to besmirch a gentleman whose only wish is to make the above society a success, irrespective of pecuniary considerations. Veiled correspondents should take the trouble to make enquiries before making just aspersions, and those of the "Old Florist" type ought to have learned, at their time of life, that now and again it is possible to meet with those who take an interest in matters without having sordid motives. Your correspondent, "A. D.," on the other hand, writes a reasonable and sensible letter in regard to the society, and perhaps it would be well if his suggestions were given consideration. *E. P. Westlake, Southampton, August 31.*

—When a correspondent writes simply to air his opinions, there may be some excuse for writing anonymously, but in personal remarks, such as those of "An Old Florist," I think it mean and cowardly so to do. Perhaps his letter and private opinion may be a little at variance. I will not intrude upon your valuable space by attempting to prove or deny what may be said for or against the formation of the Southern Counties Carnation Society, further than to state there is an increasing desire amongst the admirers of the Carnation as an object of special culture in Hampshire, the Isle of Wight, and adjoining counties that such a Society should exist, as the climatic conditions in these parts prevent our exhibitors competing on equal terms with their northern and midland friends at the London and other shows. However, I let the opinion, which "Old Florist" so knowingly declares, pass for what your readers may think it is worth, but when his letter "reveals" such an unwarrantable and personal attack, I think it is high time to protest; and I must, in justice to myself, ask you to favour me by the insertion of this letter. Whether the writer has wilfully omitted the word *gratis* in his quotation from my circular I cannot say, but if not a wilful, it is a serious omission. Before the writer ventures to express his "altered suspicion," or "presume" (as a matter of course) that good must be evil, it would be well for him to ascertain something of the standing and *bona fides* of the person he accuses of interested motives and trade tricks. For the rest allow me to say, as one of the originators of the Society, that I have come forward, at considerable expenditure of time, &c., to foster and develop the popularity of the Carnation in the south of England; and what I have offered in the way of encouragement is to give and not to sell for personal benefit, either in the present or future; and I, therefore, utterly disclaim

the unworthy imputations which "An Old Florist" makes against me. *Wm. Garton, Jun., Argyll House, Woolston, Hants, August 31, 1897.*

—"An Old Florist" (on p. 148 of the *Gard. Chron.*) is hardly just to the proposal to form a South of England Carnation Society. Why, if there be about the suggestion something of an advertising element, is it any worse than is seen in traders offering prizes to customers as inducements to purchase seeds. What would be the much-vaunted co-operative exhibition were it not a large trade advertisement? Has not the Royal Horticultural Society for many years held out to possible Fellows the bait of an annual distribution of plants? and does not even "An Old Florist" complain that the National Carnation Society tempts members by promises of packets of seed? Surely Mr. Garton, of whom I know nothing, but had imagined to be a gentleman amateur, is not worse, and every bit as good as others. And why should not the formation of provincial societies lead to the wider culture of the Carnation? Is not the "National" after all a home counties' show, and the Northern Society very much a northern counties' show? Why then not a southern one if there be found a sufficient number of amateur growers to form one? We might as well say that with the existence of the Royal Horticultural Society, there is no need for the existence of provincial horticultural societies. I say of them, the more the merrier, so long as they have a *raison d'être* for their existence, and can by their operations show they are filling a void, and rendering good service to Carnation culture. *A. D.*

A FINE BUNCH OF BANANAS.

Our illustration (fig. 48, p. 167) shows a bunch of Bananas grown in the gardens at Sherwood Park, Tunbridge Wells, the residence of Lady Siemens. The fruit was considered to be a very fine specimen, the variety being Musa Cavendishi. It contained 275 fingers, or pods, one of twin-shape weighed 13 oz., while one other of the ordinary growth turned the scale at 10 oz. The bunch of fruit, as a whole, when cut from the plant, weighed over 105 lb., and the fruits were of the finest quality. The length of the bunch from the top finger, or pod, to the bottom one, measured 4 feet 5 inches; length with stem and fruit, 5 feet 6 inches; the height of the trunk of the plant was 7 feet, and that of the leaves 8 feet. The plant was grown in a border 4 feet wide, 2 feet deep, with a flow and return-pipe for bottom-heat. The soil is old pasture-loam of a rather sandy nature. The plant was fed during its period of growth with farmyard liquid-manure, and with several top-dressings of Thomson's Vine and Plant Manure forked into the soil, followed with an application of water. The temperature of the house in the winter months ranged from 65° to 70°, and in summer, 70° to 85°, with abundance of moisture. For many years Bananas have been very successfully cultivated at Sherwood Park, and about sixteen years ago a fruit was exhibited at the Royal Horticultural Society's show in London, which attracted much attention in horticultural and other circles, its weight being 74 lb. Bananas are never planted at Sherwood except when the sucker comes up out of place, and the border has not been entirely renewed since its first formation about twenty years ago. *D. McKenzie.*

BRITISH ASSOCIATION.

(Continued from p. 149.)

SECTION K.—BOTANY.

Professor H. Marshall Ward, Sc.D., F.R.S., delivered his presidential address, which was exceedingly long and technical. He said:—

The competent historian of our branch of science will have no lack of materials when he comes to review the progress of botany during the latter half of the Victorian reign. The task of doing justice to the work in phanerogamic botany alone, under the leadership of men like Hooker, Asa Gray, Mueller, Engler, Warming, and the army of systematists so busily shifting the frontiers of the various natural groups of flowering plants, will need able hands for satisfactory treatment. A mere sketch of the influence of Kew, the principal centre of systematic botany, and of the active contingents of Indian and colonial botanists working under its inspiration, will alone require an important chapter, and it will need full knowledge and a wide vision to avoid inadequacy of treatment of its powerful stimulus on all depart-

ments of post-Darwinian botany. The *Genera Plantarum*, the *Flora of India*, suffice to remind us of the prestige of England in systematic botany, and the influence of the large and growing library of local and colonial floras we owe to the labours of Bentham, Trimen, Clarke, Oliver, Baker, Hemslay, Brandis, King, Gamble, Balfour, and the present Director of Kew, is more than merely Imperial. The progress in Europe and America of the other departments of botany has been no less remarkable, and, indeed, histology and anatomy, comparative morphology, and the physiology and pathology of plants have perhaps been advanced even more rapidly because the ground was newer. In England the work done at Cam ridge, South Kensington, and elsewhere, and the publication in the *Annals of Botany*, and other journals, sufficiently bear witness to this.

for priority are apt to accompany these subdivisions of labour; and those of us who are most intimately concerned with the teaching of botany will do well to take heed of these signs of our times, and distinguish between the healthy specialization inevitably due to the sheer weight and magnitude of our subject, and that incident on other movements and arising from other causes. The teaching and training in a university or school need not be narrow because its research laboratories are famous for special work. One powerful cause of modern specialization is utility. The development of industries like brewing, dyeing, forestry, agriculture, with their special demands on botany, shows one phase; the progress of bacteriology, palaeontology, pathology, economic and geographical botany, all asking special questions, suggests another. In each case men are encouraged to go

cell-division, and growth; the Bryophyta and pteridophyta are, on the other hand, the domain of the morphologist concerned with academic questions, such as the alternation of generations and the evolution of the higher plants.

Fungi and phanerogams, while equally or even more employed by specialists in morphology and physiology, appeal widely to general interests, and evidently on the ground of utility. Without saying that this enhances the importance of other groups, it certainly does induce scientific attention to them. I need hardly say that comparisons of the kind I am making, invidious though they may appear, in no way imply detracting from the highest honour deservedly paid to men who, like Thuret, Schmitz, and Thwaites in the past, and Bornet, Wille, and Kleve in the present, have done and are doing so much to advance our academical knowledge of the Algae; and Kleve's recent masterpiece of sustained physiological work, indeed, promises to be one of the most fruitful contributions to the study of variation that even this century has produced. Nor must we in England forget Farmer's work on *Ascomycellum*, and on the nuclei and cell-divisions of *Hepaticae*; and while Bower and Campbell have laid bare by their indefatigable labours the histological details of the mosses and vascular cryptogams, and carried the questions of alternation of generations and the evolution of these plants so far that it would almost seem little remains to be done with Hoffmeister's brilliant conception but to ask whether it is leading us, the genetic relationships have become so clear, even to the details, that the recent discovery by Ikeno and Hirao of sporangiospores in the pollen tubes of Cycas and Ginkgo almost loses its power of surprising us, because the facts fit in so well with what was already taught us by these and other workers. It is impossible to over-estimate the importance of these comparative studies, not only of the recent vascular cryptogams, but also of the fossil pteridophyta, which, in the hands of Williamson, Scott, and Seward, are yielding at every turn new building stones and explanatory charts of the edifice of evolution on the lines laid down by Darwin. All these matters, however, serve to prove my present contention, that the groups referred to do not much concern the general public; whereas, on turning to the fungi and phanerogams, we find quite a different state of affairs.

It is very significant that a group like the fungi should have attracted so much scientific attention, and aroused popular interest at the same time. In addition to their importance from more academical points of view the fungi appeal to wider interests on many grounds, but especially on that of utility. The fact that fungi affect our lives directly has been driven home, and whether as poisons or foods, destructive moulds or fermentation agents, parasitic mildews or disease germs, they occupy more of public interest than all other cryptogams together, the flowering plants alone rivaling them in this respect.

UTILITARIAN BOTANY.

A marked feature of the period we live in will be great advances made in our knowledge of the uses of plants. Of, course, this development of economic botany has gone hand in hand with the progress of geographical botany and the extension of our planting and other interests in the colonies, but the useful applications of botany to the processes of home industries are increasing also. The information acquired by travellers exploring new countries, by orchid-collectors, prospectors for new fibres or india-rubber, or resulting from the experiences of planters, foresters, and observant people, living abroad, has a value in money which does not here concern us; but it has also a value to science, for the facts collected the specimens brought home, the processes observed, the results of analyses, the suggestions gathered—in short, the puzzles propounded by these wanderers—all stimulate research, and so have a value not to be expressed in terms of money. The two react mutually, and I am convinced that the stimulus of the questions asked by commerce of botanical science has had, and is having, an important effect in promoting its advance. The best proof to be given of the converse—that botany is really useful to commerce—is afforded by the ever-increasing demands for answers to the questions of the practical man. At the risk of touching the sensibilities of those who maintain that a University should regard only the purely academical aspects of a science, I propose to discuss some cases where the reciprocal influences of applied, or useful, and purely academic, or useless botany—useless, because no use has yet been made of it, as some one has wittily put it—have resulted in gain to both. In doing this I wish to clearly state my conviction that no scientific man should be guided or restricted in his investigations by any considerations whatever as to the commercial or money value of his results—to patent a method of cultivating a bacillus, to keep secret the composition of a nutritive medium, to withhold any evidence, is anti-scientific, for by the nature of the case it is calculated to prevent improvement—i.e., to impede progress. It is not implied that there is anything intrinsically wrong in protecting a discovery—all I urge is that it is opposed to the scientific spirit. But the fact that a scientific discovery is found to have a commercial value also—for instance, Wehmer's discovery that the mould fungus, *Citroyomyces*, will convert 50 per cent. of the sugar in a saccharine solution to the commercially valuable citric acid, or Matruchet's success in germinating the spores of the Mushroom, and in sending pure cultures of that valuable agaric into the market—is no argument against the scientific value of the research. There are in agriculture, forestry, and commerce generally, innumerable and important questions for solution, the investigation of which will ne-



FIG. 48.—BUNCH OF BANANAS GROWN IN LADY SIEMENS' GARDEN, SHERWOOD PARK, TUNBRIDGE WELLS. (SEE P. 166.)

A consequence has been the specialization which must soon be openly recognised—as it already is tacitly—in botany as in zoological and other branches of science. No note has been more clearly sounded than this during the past twenty-five years, as is evident to all who have seen the origin, rise, and progress of our modern laboratories, special journals, and even the gradual subdivisions of this association. We may deplore this, as some deplore the departure of the days when a naturalist was expected to teach geology, zoology, and botany as a matter of course; but the inevitable must come. Already the establishment of bacteriological laboratories and a huge special literature of symo-technical laboratories and courses on the study of yeast and mould fungi, of agricultural stations, forestry and dairy schools, and so on—all these are signs of the inexorable results of progress. There are disadvantages, as the various *Cent abidder* and special journals show; for hurried work and feverish contentions

more and more deeply into the particular problems raised. Identification of flowers in Egyptian tombs, of pieces of wood in Roman excavations, the sorting of hay-grasses for analysis, or seeds in the warehouses; the special classifications of seedlings used by foresters, or of trees in winters, and so on, all afford examples. It is carried far, as witness the immense labour it is found worth while for experts to devote to the microscopic analysis of seeds and fruit; liable to adulteration, or to the recognition of the markings in imprints of fossil leaves, or of characters like leaf-scars, bud-scales, lenticels, and so on, by which trees may be determined even from bits of twigs.

If we look at the great groups of plants from a broad point of view, it is remarkable that the fungi and the phanerogams occupy public attention on quite other grounds than do the algae, mosses, and Ferns. Algae are especially a physiologists' group, employed in questions on nutrition, reproduction,

all the powers of careful observation, industrious recording, and thoughtful deduction of which a scientific man is capable. But while I emphatically regard these and similar problems as worthy the attention of botanists, and recognize frankly their commercial importance, I want to carefully and distinctly warn all my hearers against supposing that their solution should be attempted simply because they have a commercial value. It is because they are so full of promise as scientific problems that I think it no valid argument against their importance to theoretical science that they have been suggested in practice. In all these matters it seems to me we should recognize that practical men are doing us a service in setting questions, because they set them definitely. In the attempt to solve these problems we may be sure science will gain, and if commerce gains also, so much the better for commerce, and indirectly for us. But that is not the same thing as directly interesting ourselves in the commercial value of the answer. This is not our function and our advice and researches are the more valuable to commerce the less we are concerned with it. It is clear that the magnitude of the subject referred to is far beyond the measure of our purpose to-day, and I shall restrict myself to a short review of some advances in our knowledge of the fungi made during the last three decades. Professor Ward then proceeded to show, in somewhat minute detail, the bearing of these researches on fungi in various industries, as brewing, butter-making, cheese-making, forestry, &c.

Among the papers which have been read in the Botanical Section were several relating to forestry in Canada and the United States.

Mr. G. P. Hughes gave a description and measurement of Coniferous trees, grown from Yosemite Valley seed, conveyed by the author in 1874, and cultivated in England. The description of these Conifers tends to show that most of the Californian and British Columbian species thrive well on congenial soil and stations in Great Britain, and that as trees of ornament, shelter, and commercial value, they are well worth cultivating. Californian and British Columbian Redwood now produced 12. 11d. per cubic foot in the English market, yellow Pine, 2s. 6d.; Pitch Pine, 1s. 6d. per cubic foot.

FUNGUS.

Prof. ssor Marshall Ward, the President of the section, read a paper on "Stereum hirsutum, a Wood-destroying Fungus." He has cultivated this fungus from the spores, on sterilized wood blocks, and has not only obtained very vigorous pure cultures, and traced the action of the mycelium week by week on the elements of the wood, but has obtained spore bearing hymenae, and worked out the life-history very completely. The fertile hymenium arises in about three to four months. In destroying the wood the fungus delignifies the inner layer of the walls of the wood-elements, and in three months' cultures and upwards these turn blue in chlorzinc-iodine, and are shown by other re-agents to undergo alteration to cellulose-like bodies before their final consumption by the fungus.

Mr. Harold Wager discussed the nucleus of the yeast plant. Mr. W. G. P. Ellis described a disease of Tomatos. From diseased Tomatos received in August, 1896, from Jersey, the associated fungi and bacteria were isolated and cultivated on nutrient gelatine, and the mycelium was traced in sections of the fruits. On removing the first skin with carefully sterilized instruments the mycelium within the fruit formed in a short time the well-known sporangio-phores of Mucor stolonifer. Though late in the season (August 31, 1896), infection of some plants at the University Botanic Gardens, Cambridge, from pure cultures caused a disease resembling that of the fruits received in August and September from the grower. Experiments are in progress to determine (1) whether the fungi obtained, other than Mucor stolonifer, cause disease, and (2) the site of infection.

PRESERVATION OF VEGETABLE SPECIMENS.

The report of the committee appointed to report on the best means of preserving vegetable specimens for exhibitions in museums was presented. The committee since presenting their interim report have continued their inquiries and investigations, the result having been largely to confirm the statements already presented. Thus for preserving specimens in a liquid medium, alcohol on the whole yields the best results, in spite of its discolourizing action. Rapid killing and in some cases special methods of bleaching the specimens before immersion in the alcohol are additional precautions which it is desirable to observe. For bulky objects, or for others in which fluidity occasions no disadvantage, formalin may be used in 5 per cent. to 15 per cent. of the commercial solution. No better methods of mounting specimens for exhibition purposes have been devised than those in use in the Museum of the Royal Botanical Gardens in Edinburgh, an account of which is included in the interim report already referred to.

THE HYGROSCOPE.

Mr. Francis Darwin gave a preliminary account of a new method of investigating the behaviour of stomata. The method resembled in principle Stahl's cobalt test, inasmuch as it only indirectly indicated the condition of the stomata. The instrument made use of was a hygroscope, depending for its action on the extreme sensitiveness to watery vapour of certain substances. The best material consisted of thin sheets of horn treated in a special manner, and known as "Chinese sensitive leaf." When this membrane was placed on a damp surface it instantly curved with the concavity away from the source of moisture. If one end of a strip of the material was fixed to the lower surface of a block of cork, and placed on the stomatal face of a leaf, it was clear that only the free end could rise. It was on this principle that the hygroscope was constructed, the angle to which the hygroscope tongue rose being a rough indication of the degree of transpiration. Thus, on a leaf having stomata only below, the index of the hygroscope remained at zero on the upper surface of the leaf, while on the lower side it instantly

rose to an angle varying with the condition of the stomata. If they were widely open, the angle would be 30° or 40° to a horizontal line; if closed, the reading would be zero on both surfaces of the leaf. With this instrument a number of well-known facts in the physiology of the stomata could be easily demonstrated.

CROSS-FERTILISATION OF PLANTS.

Mr. William Saunders, Director of the Dominion experimental-farms, gave a most interesting account of the results achieved in experiments in the cross-fertilisation of plants, trees and shrubs. The work included experiments with varieties of the Gooseberry, Red and White Currant, Black Currant, Raspberry, Blackberry, Grape, Apple, Pear, Plum, Cherry, and Peach, also with different sorts of Wheat, Barley, Oats, Peas, and Rye, and with several species of wild flowers and ornamental shrubs. Among the most interesting results obtained with fruits were mentioned a hybrid between the Black Currant and Gooseberry, which strikingly shows the influence of both parents; a valuable yellowish-green Grape, known as Kensington, which is a cross between Clinton and Buckland's Sweetwater; several dark-purple Raspberries, produced by crossing the Black and the Red Raspberry; a large number of Seedling Apples, crosses between the Siberian Crab and the hardiest of the cultivated Apples; and a hybrid between the Sand-Cherry and a cultivated Plum. This latter hybrid and the crosses with the Apple are expected to give very hardy trees suitable for growing in the North-West Territories. Some very promising new varieties of Wheat have been produced by crossing Ladoga with Red and White Fife. One of these, known as Preston, ripens earlier than Red Fife, and in the tests of last season stood ahead of that variety and of all others in productiveness. Very distinct hybrids between two-rowed and six-rowed Barley have been produced, some of which may prove commercially valuable. In ornamental shrubs an interesting hybrid was obtained between two species of Barberry, the resulting shrub showing clearly the effects of the cross in the flowers, fruit, leaves, and general habit.

In the afternoon Mr. A. C. Seward gave a lecture on fossil plants.

ON GROWING PARSLEY FOR WINTER USE.

It is important to have a constant supply of fresh green Parsley throughout the year, but more especially is this useful plant in greatest demand in winter, when a supply cannot be maintained without considerable care and attention.

Some varieties are more susceptible to cold than others, therefore it is necessary to have seed from a good strain.

Parsley for the winter supply is grown in various ways, but the best result I have seen followed the method I will now endeavour to describe. It is recommended to sow the seed in the month of May, in drills 12 or 15 inches apart, on a south border. When the rough leaf appears they should be somewhat severely thinned, say from 6 to 9 inches apart in the rows, to afford each plant ample space for its full development. Not only will superior quality be thus insured, but a heavier bulk may be obtained from a given area, should the plants be allowed to grow thickly together. Close attention is necessary as to weeding and watering, as occasion may require. By the end of August they will have become large and vigorous, when a position should be chosen in some sheltered part of the garden on which to erect a structure to receive them, viz., a three-light frame or more, according to the requirements of the establishment. The most important point is to provide efficient drainage, for there is no doubt that more Parsley is annually lost through insufficient drainage than from actual frost. A quantity of brick-rubble should be laid at the bottom to the depth of 9 inches, so that the bed may be raised above the general level of the ground. The frame should then be placed on this; next a slight covering of rough leaves or stable-manure, and lastly a good layer of prepared soil, which must neither be too light or too rich. A suitable compost will consist of three parts loam, one of leaf-soil, one of decomposed cow-manure, and one part mortar-rubble; the whole should be well mixed before being placed in the frame. Press the soil firmly as it is thrown in, making it up to within 6 or 8 inches of the glass, and rake the surface level.

Before removing the plants give them a thorough soaking with water. It is a good plan to remove a portion of the leaves from the plants about a fortnight before they are lifted from the seed-bed, as by so doing the plants will receive less check than would otherwise be the case. The roots may be planted at about 6 inches apart each way, after which they should be watered and kept moderately close for a few days, shading from bright sunshine. When established, give abundance of air, and finally remove the lights entirely, except during rainy weather, when

they should be blocked up at the back and front to admit plenty of air. At no time after the plants have become established should the lights be closed, except there be hard frost and snow, when they will need to be covered with mats. Parsley may be grown well and with certainty by this method, for in such a structure the roots and stems can be kept in that dry state which is so indispensable to their health in the winter season. H. T. M., Stoneleigh.

SOCIETIES.

BRIGHTON AND SUSSEX HORTICULTURAL.

AUGUST 24, 25.—This was one of the best of several good summer shows held by the above Society. The Dome, Corn Exchange, and Lawn proved none too ample for the many (660) exhibits and classes (107). A prominent feature was the number and excellence of non-competitive exhibits. Messrs. BALCHIN & SONS, Hove; Messrs. VEITCH & SONS, Chelsea; Messrs. FREED & SON, West Norwood; and Messrs. LING & SONS, Forest Hill, were each awarded the Society's Silver Medal for their collections. There were many other exhibits, but these were of notable excellence.

As most of the classes were well filled, and many of them drew forth unusually strong competition, we can only give the chief winners in the most important classes.

GROUPS.—In the open class for miscellaneous plants, Mr. W. C. HOLLANDS, Tunbridge Wells, won from Mr. G. MILES, Dyke Road, Nursery, Brighton, both groups being well set up, but the first-named was an extremely light and pretty arrangement. The Corporation Challenge Cup and a Silver Medal went with the 1st prize.

Brighton makes a feature of its groups, and that of Ferns, from Mr. G. MILES, Dyke Road, was well set up, just beating Mr. ADAMS, gr. to the Rev. Sir GEORGE SHIFFNER, Bart., Hamsay, Lewes.

Mr. TURNER, gr. to Sir GREVILLE SMYTHE, Wick Hall, Hove, won for a group of miscellaneous plants in the division for amateurs and gentlemen's gardeners only.

TABLES OF FLOWERING AND FOLIAGE PLANTS were good, Mr. LAWRENCE, gr. to T. OLIVER, Esq., Tunbridge, Horsham, winning from Mr. W. C. HOLLANDS, closely followed by Mr. G. MILES. In the amateurs' division a table of plants arranged against a wall was a pretty and useful feature; this was secured by Mr. T. WELLS, 24, St. Martin's Street, Brighton.

PLANTS were very good and clean, the colour and finish those from J. WARREN, Esq., Handcross Park, Crawley, and Mr. A. GIBSON, gr. to T. F. BURKARD ATKINS, Esq., Halstead Place, Sevenoaks, being worthy of special note.

Mr. GIBSON beat Mr. WARREN for six stove and greenhouse plants in bloom; but Mr. WARREN was ahead for six Exotic Ferns, a specimen Croton (very bright), a specimen Palm, and a stove or greenhouse plant in bloom.

Mr. T. FAIRS, gr. to R. CLOWES, Esq., Clayton, Hassocks, won from Mr. E. MEACHEM, gr. to Miss ARMSTRONG, Woodale, Preston, for twelve Begonias; Mr. E. BOYLING, gr. to Miss WILLET, Mursplepoint, beating Mr. FAIRS for six Glaxias.

Mr. LAWRENCE beat Mr. GARNETT for six Crotons; but the positions were reversed for six very highly coloured Dracenas.

Mr. LAWRENCE, Messrs. W. MILES & Co., Hove, and Mr. J. WARREN, won in this order for some well-grown table-plants; while for a small collection of Orchids in bloom, Mr. J. HARPER, gr. to E. A. TUCKER, Esq., Vernon Lodge, Preston, beat Mr. H. GARNETT, gr. to R. G. FLETCHER, Esq., Mount Harry, Preston.

CUT FLOWERS.—Twenty-four varieties of stove and greenhouse flowers found Mr. W. ARCHER, gr. to Miss GIBSON, Saffron Walden, Essex, well in front, and the Society's Silver Medal was justly awarded. Mr. W. TAYLOR, Hampton, Middlesex, and Mr. T. DERRANT YOUNG, Eastbourne, were the only competitors for twenty-four cut Roses, and were awarded 1st and 2nd prizes respectively.

Mr. HARRIS, Denne Park, Horsham, won from Mr. T. D. YOUNG for twelve Teas or Noisette Roses.

Dahlias were exceptionally good and numerous. Mr. T. MORTIMER won for forty-eight varieties of show and fancy blooms; Mr. F. W. SEALE, Sevenoaks, following. Mr. F. W. SEALE was ahead of Messrs. KEYNES & Co., Salisbury, for twenty-four singles, and also for twelve Pompons; but Messrs. KEYNES & Co. were well in front for twelve bunches of Cactus varieties. All of these were well staged, and they made a most effective show.

FRUIT was well coloured, and of good quality. For three bunches of Black Hamburg Grapes, Mr. T. DANCY, gr. to E. J. POPE, Esq., Horsham, won with well finished examples; Mr. D. GIBSON won for three bunches of black, and three of white Grapes; and Mr. HARRIS, Horsham, for one bunch in the amateurs' division. Mr. LAWRENCE was 1st for two Melons. Mr. F. POTTER, gr. to R. WORSLEY, Esq., Cuckfield, won for two dishes of Peaches. Nectarines, Pears and Apples were also good. Mr. J. GORE, Polegate, was well ahead of Mr. Goldsmith, gr. to Sir E. LODGE, Bt., Leonardslee, Horsham, in a strong class for a collection of fruit.

VEGETABLES.—It was remarked how good these were notwithstanding the weather had been exceptionally dry in this district. The Bronze Medal and 1st prize was awarded to Mr. W. Manton, gr. to Mrs. CLIFFORD BOWER, Picknell, Bolney, for a collection of nine distinct dishes in the open division; while the special class, open to gardeners only, found Mr. H. Knight, gr. to Mrs. BARNISTER, Cuckfield, well ahead. Both were strongly contested classes; as also was that for six dishes of Potatoes, in which Mr. F. Draycott, gr. to Lieut.-Col. DUDLEY SAMPTON, Lindfield, won.

Among other exhibits not for competition we especially noticed a collection of Dahlias, &c., from Messrs. J. CHEAL & SONS, Crawley; and some good Tea and Noisette Roses from Mr. O. M. PIPER, Uckfield, Sussex.

KINGSWOOD HORTICULTURAL.

AUGUST 25.—This Society, which was formed only six years ago, has greatly prospered. Kingswood is a great industrial district, lying on an elevation east of Bristol, (sited in many ways for the culture of plants, and among the working-classes there are a great number of keen florists, who have small houses in which they grow plants to great perfection, and in the open they produce excellent cut flowers. The inhabitants take a great interest in their annual show; they decorate streets and houses, and now there is a line of electric cars running from Bristol to Kingswood, thousands of persons come out from the city to see the exhibition. The tents were in a field adjoining the Viaduct.

Certain classes open to all attract fine exhibits; thus, Mr. J. CYPRUS, of Cheltenham, showed sixteen stove and greenhouse plants, and he won with ease the handsome 1st prize. Mr. Cypher also won the handsome Silver Cup offered for a group of not less than 100 feet; it was a superb arrangement. Mr. Wilkins, gr. to Lady THEODORA GUEST, Inwood House, Blandford, was 2nd. There were very fine double and single-flowered Begonias; superb specimen Fuchsias from the Trowbridge district, and others. In the amateurs' division, open to all, Mr. GEO. TUCKER, Hilberton, Trowbridge, took the 1st prize for six fine specimen stove and greenhouse plants; Mr. WILKINS being again 2nd. In the cottagers' division there were also well-grown plants, in many respects beyond the quality usually seen.

There is always a good show of cut flowers at Kingswood. The best twenty-four varieties of Roses in trebles came from Mr. S. TANNER, Cardiff; and the best twelve from Mr. THOMAS HOBBS, Lower Easton, Bristol. Dahlias were well shown; Mr. T. HOBBS taking the 1st prize with twenty-four blooms; Mr. G. HUMPHRIES, Chippenham, had the best twelve varieties; single and Cactus varieties were also shown. The pretty Pompons do not as yet find a place in the schedule. No very good quilled Asters were staged; the Comet type represented the flat petalled varieties. In all other classes for cut blooms, and they were many, good quality prevailed.

Fruit was fairly good; and Vegetables numerous and very fine.

BATTLE FLOWER SHOW.

AUGUST 25.—This event, in which not only the exhibitors but the whole neighbourhood take a warm personal interest, was held on the above date. A heavy thunderstorm, attended by hail and rain, marred its success financially, but the show was well up to the average. This society allows the two ill-defined classes, amateurs and cottagers, to enter the lists together in Division II., to the occasional discomfiture of the well-named; but doubtless the encouragement given to cottage gardeners by the Duchess of Cleveland, Lord Brassey, and his family, who offer substantial prizes, is the main cause of this.

The exhibitors of both flowering and foliage plants were much the same as shared the honours at Hastings; but the fruit staged was larger in quantity, and better in quality. Mr. W. ALLEN, gr. to Lord BRASSEY, secured the lion's share of the prizes. In some classes he was very closely run by Mr. J. GORE, fruit-grower, Polegate, whose Gros Maroc Grapes were faultless, while Mr. ALLEN's Muscat of Alexandria were perfection itself.

American Peaches were to the fore, Sea Eagle taking both 1st and 2nd prizes in Division I. Grapes were very good; three bunches of Madresfield Court, shown by Mr. J. GORE, were models of culture and finish.

Plums are always a great feature here. Mr. B. H. THORPE, Battle, again took 1st honours with Transparent Gage, their luscious pulp showing golden yellow through their delicate skin. The 1st prize for culinary Plums was awarded to a fine dish of the old Plum, Belle de Louvain, and 2nd to Victoria, which variety originated in Sussex.

Morello Cherries were fine and clean, Mr. ALLEN securing 1st prize for a plate of fifty fruits.

Pears.—1st, Clapp's Favorite, Mr. J. GORE; 2nd, to Souvenir du Congrès, not so named.

Culinary Apples.—1st, W. ALLEN, with a handsome dish of Peasegood's Nonsuch; 2nd, Warner's King, by A. Hewitt, gr. to Captain ELLICE.

Desert Apples.—1st, W. ALLEN, with Irish Peach; 2nd, Mr. THOMAS WANNOCK, with Lady Sudeley.

For a collection of eight dishes, 1st, Mr. J. GORE, Polegate; 2nd, to the Abbey Gardens (Mr. CAMM).

Nothing calling for notice was shown in Division II., but

the cottagers' class produced some excellent dishes of culinary Apples, Mr. T. BRYANT, Newport, securing an easy 1st with Glory of Hants; while Mr. R. SAUNDERS, Netherfield, was a close 2nd, with Potts' Seedling.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

AUGUST 26.—On the occasion of this meeting, Wm. THOMPSON, Esq., Walton Grange, took the Chair.

The number of exhibits was few, but many of them were distinguished for high quality, and thirty-four plants were submitted to the committee.

WM. THOMPSON (Mr. Stevens, gr.), showed Cattleya Gaskelliana Nolle (Award of Merit), a freely-formed flower of the lighter strain, also Cattleya speciosissima (Award of Merit); this was a flower good in every point, with two white spots on the lip, which formed a good contrast with the shaded bluish tints of the rest of the flower; the pretty Oncidium venustum (Rolfe), with flowers the colour of O. concolor, but not as large. It received a Cultural Certificate, but an "Award of Merit" would have been a more fitting award.

A. WARBURTON, Esq., Vase House, Haalingden (Mr. Thos. Lofthouse, gr.), showed Cypripedium Lawrenceanum Hyanum. This deservedly received a First-class Certificate.

THOMAS STATTER, Esq., Stand Hall (Mr. R. Johnson, gr.), sent a number of valuable plants, the more prominent being Cypripedium Lord Derby (First-class Certificate). This is a very large flower, somewhat similar to C. x Morganii Burfordense. It is a cross between Rothschildianum and superbiens, and is an improvement on either of them. The chief gain in the progeny lies in the broad-leaved sepals and petals, and in the Indian-red spotting of the lip, which is of a higher colour than in the pollen parent; it was a well-grown plant. Along with this was a plant of Laelia-Cattleya Nysa superba (Award of Merit). This is a brilliant flower, and might have deserved a higher award as a seedling of Laelia-Cattleya crispata x with Cattleya gigas. The Laelia purpurata Blenheimense from the same exhibitor (Award of Merit) is an effective flower; and Cattleya gigas delicata (Award of Merit) is one of the prettiest of that showy section.

SAMUEL GRATRIX, Esq., Whalley Range (Mr. R. McLeod, gr.) showed Cattleya x Mary Gratrix = C. Harrisoni, or rather C. intermedia and C. Schofieldiana; the peach-coloured ground of C. Harrisoni and the spotting of C. Schofieldiana were very obvious, the whole flower forming an interesting object-lesson for hybridists. The same exhibitor had Cypripedium x Chapmani, Gratrix's variety (Award of Merit); and Cypripedium x Callo-Rothschildianum = Rothschildianum x album, both of which are fine gains in their way.

Mr. J. ANDERSON, Wallace Avenue, exhibited Cattleya Harrisoni guttata, in which the whole of the sepals and petals were regularly covered with cherry-red spots on a peach-coloured ground, through and through the fabric; he also showed a pretty coloured form of the pale flowered section of Cattleya Schofieldiana—a very striking form; and several showy Cattleyas of the finest quality, including C. superba.

E. J. SIDEBOTHAM, Esq., Eriadene, Bowdon (Mr. Shiner, gr.), had a remarkable example of Cattleya Leopoldi, the flowers of which remind one of Oak-leaves in October; the plant is not vigorous, but the flowers are of fine size, and found favour with the committee, who awarded it a First-class Certificate.

T. LEMANN, Esq., West Bank House, Heaton Mersey (Mr. Edge, gr.), showed some very choice plants, the most striking of which was Lycas e leucantha (whose?), which the committee asked to see again; also Dendrobium Victoris regina, Cattleya aurea, and several others.

H. GREENWOOD, Esq., Highfield House, Haalingden (Mr. Spurr, gr.), showed Zygopetalum Gautieri (Award of Merit), growing on a Tree Fern stem, the flowers looking all the better for being in the midst of the fronds; he also showed a good variety of Miltonia Morelliana atrorubens (Award of Merit). W. H. ALMOND, Esq., Alumacarr, Blackburn, exhibited a fine form of Cattleya Gaskelliana, with more than a dozen flowers in fine condition, and several blooms of Cattleya Leopoldi.

SWANSEA HORTICULTURAL.

AUGUST 26.—The first annual show of this Society took place on the above date, and was a great success. It was held in the New Market, which has been built at a cost of nearly £27,000. The value of the market as a place for holding the show was proved on the first occasion, for during the day rain fell in torrents, but there being accommodation sufficient for thousands, visitors were rendered independent of the weather. The exhibits were excellent in quality and quantity, about 900 entries being sent in. The Trade exhibits formed a prominent feature of the show.

Messrs. KELWAY & SONS, Langport, Somerset, staged a grand exhibit, consisting of 100 spikes of Gladioli, and collections of Dahlias, Delphiniums, and other herbaceous flowers. Messrs. THESDORP of Cardiff put up a magnificent collection of Dahlias. Messrs. CLEBURN & SON of Altrincham a fine collection of herbaceous flowers.

Messrs. DICKSON's exhibit of Roses in bunches was greatly admired, including as it did many of the most beautiful kinds.

Messrs. PARSONS & Co. and Mr. A. KITLEY, both of Swansea, had exhibits also of horticultural produce.

The best and most attractive exhibits were the several

groups of miscellaneous plants arranged to produce the best effect. The 1st prize of £5 was offered by Sir J. T. D. Llewelyn. Each group occupied 100 square feet, and it would be difficult to imagine a better aesthetic effect. The group from Mrs. PICTON TURNERVILLE's gardens at Hendre-fellan took the 1st prize. Taste in arrangement, no less than the rare beauty of the plants, told in its favour, and Mr. Hawkins, the gardener, is to be congratulated upon his success. The centre-piece was a stately Palm, and between this and the dainty border of Panicum variegatum were handsome Colosias, Eulalias, prettily-tinted Coleus, and delicate-looking Asparagus Ferns, mingled promiscuously but artistically with the choicest of flowering plants. The group exhibited by Mr. W. FARRANT, which took 2nd prize, was very little behind. In the centre a Palm (Seaforthia elegans) rose majestically, and the Crotons, Dracenas, Coleus, and Palms of several varieties that surrounded it, were exceptionally beautiful.

In the groups occupying 50 square feet, for amateurs and gentlemen's gardeners residing within twenty miles of Swansea, there were four competitors, and standing, as they did, near the more magnificent plants, they were thrown slightly into the shade. Still, the groups were excellent, the predominating plants being the same as in the larger groups.

There was a number of classes for plants, both stove and greenhouse species, and the exhibits in these were satisfactory.

One of the most interesting departments of the show was that for cut flowers, the blooms shown in competition being of the very finest quality. For Roses, Mr. RALPH CROSSLING of Penarth, and Mr. THOMAS PENRICE came into close competition, the former carrying off the prize. In the class limited to a radius of 20 miles, Mr. T. PENRICE, whose Roses are the envy of Gowerland, was easily 1st.

Double Dahlias were splendid, and here Mr. GEORGE HUMPHRIES, of Chippenham, was the most successful exhibitor. For symmetry in petal formation, and for purity in colouring, from the chaste white of the Flag of Truce variety to the quaint hues of the Dorothy, and the deep beauty of the Victor, his stand of Dahlias would be difficult to excel. In Cactus Dahlias Mr. HUMPHRIES again took 1st prize.

Asters were not exceptionally good, and there was little to choose between the stands of Mr. HUMPHRIES and Mr. G. POULET, of Morriston, who was amongst the most successful exhibitors in the show.

The prizes offered for bouquets were productive of some charming specimens of the florist's art.

GRAPES were very good, those from the vine of Mr. PHILIP RICHARD, which took 1st prize, being exceedingly fine. Mrs. PICTON TURNERVILLE's vine yielded fruit scarcely inferior.

VEGETABLES were shown in some quantity, and the quality throughout was commendable.

SANDY AND DISTRICT HORTICULTURAL.

AUGUST 24.—This exhibition was originated twenty-nine years ago, and has been continued ever since. One great attraction is found in the fact that almost everything that can interest country people is represented—plants and flowers, fruits and vegetables, market-garden and farm produce, dogs, cats, poultry, needlework, carving, &c. All these are arranged in a series of tents formed in an irregular circle running round the park of Sandy Place, in which the show is held. Anyone interested in country pursuits would find a visit to the Sandy show one that would both instruct and entertain.

From a horticultural point of view, the Sandy show is an important one. Good prizes are offered for certain plants and cut flowers, open to all comers. There is one for ten stove and greenhouse plants in flower, and Mr. J. CYPRUS came from Cheltenham with some very fine specimens. There were some nice groups arranged for effect from local exhibitors; very good zonal Pelargoniums, and local classes for foliage and stove and greenhouse plants, Fuchsias, Begonias, Coleus, &c.

Sandy has pre-eminently a cut-flower competition, the largest tent being filled with them. There was a class for forty-eight cut blooms of Roses, and some very nice fresh blooms were staged by Mr. J. MATTOCK, nurseryman, Oxford; and Messrs. G. & W. BURCH, nurserymen, Peterborough, were 2nd.

Mr. MATTOCK had the best eighteen Tea-scented Roses, showing some excellent blooms.

In the amateurs' divisions some fairly good Roses were staged. Dahlias were a good feature, the prizes bringing some of the leading growers. Mr. S. MONTIMER, Swiss Nursery, Farnham, was 1st, with a superb lot of blooms. With twelve fancy Dahlias, Messrs. KEYNES & Co., were 1st, some very good blooms being staged. Pompon, Cactus, and single Dahlias were also very good features; and of the Cactus type, Messrs. KEYNES & Co. put up a superb stand of twelve bunches, some of them new varieties of great beauty.

Hardy flowers were magnificent; there were five or six collections of twenty-four bunches, many of them large and imposing. The best came from Mr. W. H. LEES, gr. to F. A. BEVAN, Esq., Trent Park, Barnet, who had a remarkably fine selection admirably staged. In the amateurs and cottagers divisions, good cut flowers generally were staged.

FRUIT AND VEGETABLES were extensively shown the latter particularly so. The special prizes offered by Messrs. SUTTON & SONS and Messrs. CARTER & CO. brought very fine collections.

ACCRINGTON AND DISTRICT HORTICULTURAL.

AUGUST 27.—This exhibition was a creditable one, comprising plants arranged for effect, and also a large quantity of florists' flowers, as well as a fine exhibition of Grapes and other fruits, and many vegetables.

Mr. BRIGGS-BURY, Bank House (Mr. John Wilkinson, gr.), sent for exhibition only a fine group of *Ore'ids*, prominent among which were *Cattleya Gaskelliana* magnifica, a flower of very large size, with a beautifully blended orange and cerise lip, and the peach-coloured segments standing flat and close together. One or two well-grown *Laelio-Cattleyas* shone out, and among *Cypripediums* there was nothing finer than *C. Crossianum*. A. WARBURTON, Esq. (Mr. Tom Loft-house, gr.), had *Cypripedium Lawrenceanum* Hyeaenum, and the much-spoken-of *C. Insigne* Laura Kimball. This was in much better condition than when shown in Manchester by H. Low & Co., being quite free from spots, but not so finely finished a flower as I was led to believe. J. A.

HAMBURG GENERAL HORTICULTURAL EXHIBITION.

Special Show.

AUGUST 27—SEPTEMBER 5.—Having just returned from a visit to the great horticultural exhibition at Hamburg, I think it possible that a short description of the show may be of interest to your readers. As has been previously mentioned in these columns, the exhibition has been open since last May, and will continue open until the end of September, several special shows meanwhile being held of the fruits flowers, &c., in season. The permanent exhibits are Conifers, evergreens and deciduous trees, fruit trees, Roses, hardy herbaceous perennials, Dahlias, Cannas, bedding-plants, &c.

The exhibition is held in a public park between the Holstein and Millern gates, the site being a part of the old moat and ramparts of the free city of Hamburg. The moat being filled with water, fringed with Rushes and aquatics, spanned by rustic bridges, and having one or two charming chalets on its banks, is a great feature in the landscape and the old rampart being clothed with trees in places, and fine lawns sweeping down to the water, breaks up the ground, and makes it an exceptionally favourable spot for laying out a garden on a large scale. The grounds consist of some 45 acres, and the exhibits, which are under cover, are mainly housed in structures of wood and canvas, erected around the margins of the park, leaving the centre free; the exception to this is the grand hall, which is a huge structure on the summit of the bank overlooking the moat, and visible from every part of the garden. I have no measurements to guide me, but, roughly speaking, I should say the interior, which is used for displaying plants, is some 300 feet long by 150 feet wide. There is a large gallery at the east end, also a lecture-hall and committee-rooms. The building, which is of wood cost 300,000 marks.

INTERIOR OF GREAT HALL.

I need not trouble you with a description of the exterior of the building or its architecture, but will endeavour to describe the interior as seen from the large gallery at the east end. In the centre is a huge dome lighted by four dormer windows, and a central light at the top; right and left are short transepts with large windows, and facing one there is what may be described as a long chancel, dim and dark. I have used terms of church architecture to describe the building, and really in form it most resembles a church, and certainly the light is "dim" if not "religious." The whole interior, dome, arches, and massive-looking pillars, are white, relieved with gilt here and there. Under the dome is a basin of water with rock edges, surrounded with beds laid out in a regular pattern, and these are massed with plants in pots, Cyclamen, Begonias, Roses, Carnations, Lily of the Valley, and small foliage plants, each bed of one kind, and surrounded by masses of Maidenhair Ferns to afford relief. This garden is flanked on either side by a group of Palms, with feathery specimens 20 feet high, breaking the groups here and there. Looking away to what I have called the chancel end is seen a large mass of *Caladiums*, behind which are *Dracenas*, and a deep background of Palms reaching up to a great height; immediately under the spectator is a fine bank of *Crotons*, *Dracenas*, and other foliage plants; the sides have also groups of mixed flowering and foliage plants, and beyond these are galleries filled in similar style. The water for the centre basin enters on the right hand side by a cascade with quaint figures of sea gods, and escapes by a sort of rock grotto. At the south-west corner of the building is a tunnel of rockwork, clothed at the entrance with Ferns and Palms, and leads out into the gardens.

As a whole, the view in this large building is very pleasing; there is a wealth of immense Palms which one rarely sees, and they form an admirable background, preventing any appearance of flatness or dwarfing which ordinary plants would have in such a large and apparently massive building. With regard to the plants themselves, I suppose such a number of fine Palms has seldom been seen together, the bulk of

them are sent by Mr. L. WINTER, of Bordighera, and are grown out of doors at his home in Italy, although Mr. A. Wager, of Leipzig, shows some fine specimens of indoor culture; one is struck by the well-grown and finely-coloured *Dracenas*, *Crotons*, and other foliage plants, but the flowering plants are not equal to those seen at home.

PROFUSION OF CUT FLOWERS.

Passing from the central hall, one finds a building some five hundred feet in length devoted to cut-flowers arranged as bouquets, sprays, wreaths, crosses, and in all kinds of fancy designs; there are also vases of flowers and wreaths of foliage with wild fruits and berries. To attempt a description would be vain, a jury of five judges has been three days making awards, so that space would fail were one to attempt to review this department, even in a superficial way; suffice it to say, that any lover of flowers could well spend a day there, and it would repay a long journey to do so. In the matter of bouquets and sprays we have not much to learn, and a visitor who had seen this department at Shrewsbury this year would have no need to blush for our English bouquet artists; yet one could not help admiring the dainty little bridal bouquets which are used in Germany, just a light little arrangement of Myrtle, white Roses, and a few Lilies of the Valley with a narrow white ribbon and lace, a bouquet which we should call a child's bouquet, and yet perhaps more suitable for a bride to carry than our larger arrangements. Whilst one's insular taste is perhaps not quite educated (I do.) enough to admire windmills, wheelbarrows, and other monstrosities formed with flowers, and which are apt to recall to one's mind the fearful designs made of butterflies which one used to see in years gone by in the windows of local naturalists, yet one could but admire some of the fancy designs, and more particularly the admirable taste shown in the arrangement of colours. One or two designs which struck me as tasteful I will briefly mention, passing by the hundreds of wreaths, broken lyres, and other well-known emblems. Firstly, a broken wheel resting against a pillar, the wheel and pillar of Silver Birch, the wheel ornamented with *Odontoglossums* and Maidenhair, the pillar entwined with *Niphetos* Roses and sprays of brown *Berberis*. Again, a basket of white Water-Lilies and Bulrushes was most charming; as was a tall vase of frosted silver filled with *Gladiolus Frencheyensis*, *Vallota purpurea*, *Lobelia cardinalis*, with its dark foliage, and scarlet *Cactus Dahlias*. Cushions seemed much in vogue, a design that one cannot approve of, for who wants to sit upon flowers; yet some were very pretty; a dark cushion of *Scabious* fringed with grasses, and a spray of *Lapageria alba* upon it; another of purple Stocks with white Roses; and again one of *Mignonette* with *Cypripediums*, [were very pleasing. One could not help noting an inverted umbrella composed of *Hydrangea paniculata* edged with Maidenhair—at a little distance the peculiar white and greenish tones of the *Hydrangea* exactly resembled lace, and the design was relieved by a few *La France* Roses. A white marble cross made of *Chrysanthemum* blooms packed together with a trailer or two of *Clematis discolor*, and pale Roses twining round, with a base of white specimen Lilies and Palm leaves was very striking. But we must leave this department, and passing rapidly through other buildings containing *Dracenas*, Palms, &c., we arrive at a structure where Erfurt is the title. Here are represented the articles for which the Erfurt seed growers are famous, and one finds large collections (and alas, designs in colour) of Asters, Zinnias, Phlox, *Gallardias*, *Potunias*, Marigolds, &c. The quality of the exhibits, especially Asters, is not equal to one's expectations—but the season has not been favourable for the development of good blooms. Cut blooms of herbaceous plants and *Gladioli* form an important feature, and Messrs. HAAGE & SCHMIDT have a fine group of a really white *Gladiolus*, White Lady.

MISCELLANEOUS EXHIBITS.

Mr. WINTER fills the next section with Palms, and then in a quiet corner we find Mr. SANDER, of St. Albans, with a magnificent group of *Nepenthes* and new Palms. Messrs. H. Low & Co. have a group of Orchids, and several amateurs are represented with good plants.

In the next building are fruits and Tomatoes, Vines in pots, fairly done; Apples and Pears in pots, good, shown by an amateur; the most striking exhibit is a case of Black Hamburg, lauded in a pot and encased in a glass structure, the case carrying twenty large bunches of finely-coloured and well-finished fruit. The Apples, Pears, and Plums in this department are poor, and for the most part unnamed.

Out of this building one passes through a permanent exhibit of much interest, which consists of a collection of insects injurious to horticulture and forestry, with specimens of damaged foliage, wood, &c., and the insects in all stages. Then comes a building of market plants, and from this one passes to a structure sacred to the dwellers at Wandbeck. The horticulturists of Wandbeck have furnished this building since the commencement of the exhibition. At the present moment the central portion is filled with flowering plants, double and semi-double and *Pelargoniums*, *Gloxinias* (good), Carnations, and Lily of the Valley, also *Dracenas* and small Orange trees; the sides with Palms and foliage plants. One grower has a collection of bulbs in a dry state—*Tulips* and *Hyacinths*—but I hear that most of his produce goes to Holland. Centres of trade are difficult to establish, and not easy to remove; and it will be long ere Holland ceases to be the recognised home of *Hyacinth* and *Tulip* culture.

Wandbeck is one of the centres of Lily of the Valley culture, and some interesting photographs of the fields are exhibited; in one of these may be seen sixty women and boys

picking up the crowns as they are turned out by the plough; in another eighteen women working "plant juns" hoes, this almost rivals "Chinese cheap labour."

Crossing near to the principal entrance, one finds streets of vegetables on tables in the open air. To our mind this was the most disappointing feature of the exhibition; most of the prizes were awarded to collections rich in number of varieties but poor in point of quality, while other collections smaller in point of numbers, but of fresh, good stuff had to be contented with lower awards. Some of the market growers put up admirable collections not for competition, but a great many of the vegetables contained in the large exhibits were stale, badly grown, and rough. The Potatoes (excepting those of the market-growers) were beneath contempt from an exhibitor's point of view, small, scabby, ill-formed, split with the digging-fork, and devoured by wire-worm, a cottage-garden show at home would have refused them bench room.

Collections of Cucumbers in a ripe state did not appeal to us, but here they preserve them, and afterwards eat them! The small Carrots, Radishes and Salads of the market-growers were good, and naturally Cabbages were to the fore both in numbers and quality, but it struck us as rather overdoing the thing when one seedsmen showed sixteen distinct varieties of Red Cabbage, and we doubted the ability of anyone to rename them had their labels been taken away.

Next to the vegetables is a structure some three hundred feet long of cut-blossoms, principally Dahlias, of which flower one exhibitor staged five hundred different varieties! We did not take notes of all of these. Messrs. LEMOINE & SONS showed a fine lot of new hybrid *Gladioli*, and other exhibitors had collections of Herbaceous Perennials, Zinnias, Asters, *Montbretias*, &c.

It will give your readers some idea of the vast number of exhibits in the various classes if we state here that the judges for this particular show numbered 120, and that it took upon the average a day and a half for them to complete their labours.

THE VIEW OUTSIDE.

Leaving the buildings, we may say with regard to the gardens that their natural features, already mentioned, have been made the most of by the honorary landscape architect Mr. Rudolf Jürgens, and the result is highly creditable. Bold sweeping roads, I had almost said walks, permit of thousands of visitors promenading without inconvenience, and as there are 70,000 season-ticket holders, this is important. The permanent exhibits of Conifers, herbaceous plants, &c., are all treated with an eye to general effect, and the result is really more like an ornamental garden than an exhibition.

It would be quite impossible in the limits of this sketch to mention a tithe of the outdoor exhibits, but one cannot fail to notice a large oval basin of water on the terrace, in which is growing a collection of aquatics planted by the Curator of the Hamburg Botanical Garden. They were planted early in May, but have the appearance of having been established for years, so luxuriant is their growth. Of course the temperature of the water is artificially raised. In the centre of the basin is some rockwork, with various Rushes growing around it, and on the margin of the water are Arrow-heads (*Sagittaria*), &c. The surface is now almost covered with Lilies of many descriptions in full bloom; especially fine are *Nymphas*, *Ortgiesiana*, which has a lovely pink bloom, with pointed petals, and dark foliage, of striking contrast, the flowers being produced very freely. *Camboma caroliniana*, with single yellow blooms, like a *Malva moschata*, most charming; *Eichhornia azurea*, a blue water-Hyacinth, and many others.

Standard-trained plants seem much in demand, and are in many instances used with good effect. Especially fine is a bed of standard *Heliotropes*, with stems like young Apple trees; the standard *Fuchsias* are also good; and a bed of standard *Pelargoniums*, with a dark background of Pines, is striking. Roses are a great feature in the permanent exhibits; and, in addition to many large beds of standards planted about the gardens, there is a Rose-garden proper of some acre in extent, and also extensive beds of dwarf Roses in another part of the grounds. Many of the standard Roses are worked upon *Rosa laxa*, and have stems of the thickness of a lead-pencil. These necessitate supports, but they enable the grower in Central Germany to lay his plants down in the winter, and cover them with soil and straw, thus escaping destruction by frost. Not many Roses are in bloom, as it is now between the seasons, but we noticed that the standards upon *R. laxa* had more flowers than those on the *Rubra*. Whether this is the case all through the season, we could not ascertain.

Cannas planted singly on the grass are in great numbers and very effective, masses of *Lilium speciosum* in sheltered spots are superb; and *Gladioli* are in full beauty, but buried in places by blanks suggestive of disease. Cat-bedding is represented, but does not call for any remarks. Alpines and hardy Ferns are planted on the shady side of mounds, and there are borders on the outside of the gardens proper devoted to annuals. Here also one finds the model fruit gardens, enclosed by trained trees stretched on wires, palmettes, cordons and horizontally trained, and inside squares of pyramid trees with edgings of horizontal cordons; the trees are most of them excellently trained, but very old and what we should term scrubby; of fruit they do not carry much this season. Standard Gooseberries and Currants are especially well done, and have carried large crops of fruit; trained Cherries and Peaches are poor, especially the latter.

HOW THE JUDGES FARED.

I must conclude these notes with a word of thanks to our entertainers. We were received with every kindness and

courtesy, a special tour round the city in coaches, and through the docks and harbour in steam launches, being arranged for our last day, which concluded with a dinner in the Great Hall at night. The judges were of diverse nationalities, including a Turk, a Dane, some Swedes, a sprinkling of French and Belgians, a couple of Englishmen, and the same number of our countrymen from the United States. Speeches were delivered in all sorts of languages, old friendships renewed, and a general "good time" enjoyed. It will be long ere the memory of the Hamburg International Exhibition of 1897 fades from the memory of A. H. Pearson.

Obituary.

W. H. BLAND.—It is with regret that we have to record the death of Mr. W. H. Bland, of the Old Nurseries, Fordham, Cambs, in his 80th year. He was the raiser of the Hollyhook Black Night, of a Tree-Box which is unsurpassed at the present time, and of a golden variegated Spruce. His son, Mr. Edwin Bland, will carry on the business.



The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.

TEMPERATURE.	RAINFALL.	BRIGHT SUN.
ACCUMULATED.	RAIN.	SUN.
Above 42° for the week ending August 28.	More (or less) than 42°.	No. of Rainy Days since Jan. 1, 1897.
Above 42° for the week.	Below 42° for the week.	Total Fall since Jan. 1, 1897.
Above 42° difference from Mean since Jan. 1, 1897.	Below 42° difference from Mean since Jan. 1, 1897.	Percentage of possible Duration for the Week.
Above 42° difference from Mean since Jan. 1, 1897.	Below 42° difference from Mean since Jan. 1, 1897.	Percentage of possible Duration since Jan. 1, 1897.

Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.	Ins.
0 + 95	0 + 292	8 6	145	25.2	33	30
1 1 + 102	0 + 16 + 12	2 2	133	19.8	30	33
2 + 116	0 + 16 + 78	6 + 120	15.2	40	36	
30 aver	118	0 + 231 - 124	3 + 118	14.8	40	36
4 1 - 111	0 + 212 - 115	1 + 119	17.9	33	37	
50 aver	128	0 + 296 - 180	5 + 110	18.1	43	41
6 1 + 103	0 + 140 - 20	4 - 115	27.2	35	34	
70 aver	112	0 + 215 - 92	3 - 139	21.1	31	16
8 2 - 109	0 + 297 - 138	6 + 140	27.1	33	40	
9 1 - 98	0 + 78 + 8	1 + 155	26.9	30	31	
10 1 - 107	0 + 19 - 57	2 + 148	28.7	36	33	
10 aver	132	0 + 360 - 80	9 + 149	22.8	51	43

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Graining, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W. 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending August 28, is furnished from the Meteorological Office:—

"The weather during this period continued in a very unsettled state generally, but the falls of rain were less frequent and heavy in the extreme north and north-west than elsewhere. Sharp thunderstorms were experienced over England on the 24th and 25th.

"The temperature did not differ materially from the mean, but was slightly above it in the north, and below it in the south and south-west. The highest of the maxima were registered, as a rule, towards the end of the week, and ranged from 73° in the 'Midland Counties' and 'England, S.W.' to 69° in Ireland, and 68° in 'Scotland, N.' The lowest of the minima, which were recorded on rather irregular dates, ranged from 37° in 'Scotland, E.' and 38° in 'England, S.W.' to 43° in 'England, S.' and to 55° in the 'Channel Islands.'

"The rain/fall was less than the mean in Scotland, but more elsewhere, the excess in most parts of England and in the 'Channel Islands' being very considerable.

"The bright sunshine exceeded the mean in 'Scotland, N' and 'E.,' 'England, N.E.,' and over Ireland, and just equalled it in 'Scotland, W.;' in all other parts of the kingdom it was rather less. The percentage of the possible duration ranged from 51 in the 'Channel Islands,' to 43 in 'England, S.,' and to 31 in 'Ireland, N.'"

STATISTICS OF THE JERSEY POTATO CROP, FOR SEASON 1897, giving the number of packages and tons exported; also the average price per week at the States' Weighbridge (St. Helier), and a comparative table for fifteen consecutive years, 1897 included, viz.:—

Weekly Shipments.	No. of Packages.	Tons.	Average price 50 Cwt. at the Jersey States Weighbridge.	Weekly Totals.	Year.	Comparative Statement.
April 19 to May 1	6,137	130	£ 4 4	8,311 0	1883	86,465
May 3 to May 8	16,165	375	£ 4 4	9,004 11 8	1884	87,831 18 0
May 10 to May 15	46,568	1,865	£ 4 4	25,457 5 0	1885	83,524
May 17 to May 22	74,871	3,300	£ 4 4	41,166 18 4	1886	84,850
May 24 to May 29	113,415	5,810	£ 4 4	59,704 11 8	1887	86,073
May 31 to June 5	128,274	7,050	£ 4 4	53,462 10 0	1888	86,938
June 7 to June 12	177,962	10,788	£ 4 4	64,378 10 0	1889	85,700
June 14 to June 19	119,068	10,280	£ 4 4	60,135 0 0	1890	84,160
June 21 to June 26	174,280	10,280	£ 4 4	50,121 10 0	1891	86,832
June 28 to July 3	84,335	4,990	£ 4 4	29,403 15 0	1892	87,885 18 10
July 5 to July 10	20,924	1,165	£ 4 4	6,426 10 0	1893	87,866 18 4
July 12 to July 15	2,369	132	£ 4 4	639 4 0	1894	86,960
Totals	983,017	58,555	£ 4 4	402,274 9 10	1895	86,133
					1896	83,335
					1897	402,274 9 10

MARKETS.

COVENT GARDEN, SEPTEMBER 2.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly by very Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Dessert, in variety, p. bush. 8 0-10	Nectarines, selectd. fruit, per doz. 6 0-8 0
— Culinary, in variety, per bush. 3 6-5 0	— Medium, p. doz. 3 0-4 0
Blackberries, peck 3 0-4 0	— Seconds, p. doz. 1 6-2 0
Damsons, 4-bushel 6 0	Nuts, Cobs, per lb. 0 3
Figs, per doz. 1 0-2 0	— Filberts, per lb. 0 2
Grapes, Gros Colmar, per lb. 1 6-2 0	Oranges, S. Australian, p. cise, containing 120 fruit 10 0-12 0
— Gros Maroc, lb. 1 0-1 6	Peaches, selected fruits, per doz. 6 0-8 0
— Alicante, p. lb. 1 0-1 3	— Medium, p. doz. 2 6-3 0
— Hamburgs, selected, per lb. 1 0-1 6	— Seconds, per dozen 1 6-2 0
— 2nd quality, per lb. 1 0	Pears, various, per bushel 4 0-10 0
— Muscats, "Canon Hall," p. lb. 4 0-5 0	— small, bush. 2 0-3 0
— Channel Islands, per lb. 0 7-0 9	Pine-apples, St. Michael, each 5 0-8
— Muscats, selected, per lb. 2 0-2 6	Plums, Greengage, per 4-bushel 9 0-10 0
— Muscats, 2nd quality, per lb. 0 9-1 3	— Victoria, per 4-bushel 5 0-6 0
Melons, each 0 9-1 0	— Ordinary, in variety, 4-bush. 4 0-6 0
Mulberries, per gal. 1 6	

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, per dozen blooms 3 0-6 0	Marguerites, per 12 bunches 2 0-4 0
Asters, 12 bunches 2 6-6 0	Mignonette, per doz. bunches 2 0-4 0
Bonvardias, per bunch 0 4-0 6	Myosotis, or Forget-me-not, 12 bunch 1 6-3 0
Carnations, pr. doz. blooms 0 0-2 0	Ochids: Cattleya, 12 blms. 9 0-12 0
— per doz. bun. 4 0-6 0	— Odontoglossum crispum, 12 blms. 2 0-4 0
Chrysanthemums, p. doz. blooms 0 6-2 6	Polygoniums, scarlet, per 12 bun. 3 0-6 0
— p. doz. bunches 3 0-6 0	— per 12 sprays 0 4-0 6
Cornflowers, per doz. bunches 1 0-2 0	Pyrethrums, 12 blms. 1 6-2 6
Eucharis, per dozen Gardenias, per doz. blooms 2 0-4 0	Roses, Tea, per doz. — yellow (Maréchal), per doz. 1 6-4 0
Gladolus, various, per doz. bunches 4 0-9 0	— red, per dozen 0 9-1 0
Lilium Harriet, per doz. blooms 2 0-4 0	— pink, per doz. 1 0-2 0
— Lancifolium, per doz. blooms 1 0-2 0	— Safrano, p. doz. 1 0-2 0
Lily of the Valley, dozen sprays 1 6-2 6	Roses, per dozen bunches 2 0-6 0
Maidenhair Fern, per 12 bunches 4 0-8 0	Stephanotis, dozen sprays 1 6-3 0
	Sweet Sultan, per dozen bunches 1 0-2 0
	Tuberose, 12 blms. 0 8-0 4

ORCHID-BLOOM in variety.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Ferns, small, doz. 1 0-2 0
Aspidistras, per doz. 12 0-30 0	— various, doz. 5 0-12 0
— specimen, each 5 0-15 0	Foliage plants, doz. 12 0-36 0
Asters, various, per doz. 3 6-5 0	Fuchsia, per doz. 4 0-6 0
Chrysanthemums, p. doz. pots 5 0-9 0	Hellebore, dozen 3 0-4 0
— specimen, or large plants, ea. 1 6-2 6	Hydrangeas, per dozen 8 0-10 0
Coleus, per doz. 3 0-4 0	Liliums, various, per dozen 9 0-12 0
Companula, p. doz. 4 0-6 0	Marguerites, p. doz. 6 0-9 0
Dracenas, each 1 0-7 6	Mignonette, p. doz. 4 0-6 0
— various, p. doz. 12 0-24 0	Palma, various, ea. 10 0-16 0
Evergreen shrubs, in variety, doz. 6 0-24 0	— specimens, ea. 10 0-84 0
Ficus elastica, each 1 0-7 6	Polygoniums, per dozen 6 0-10 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. 2 0	Mushrooms, out-door, 4-bushel 2 6-3 0
Beans, French, per bushel 1 6	Peas, per bushel 5 0-6 0
— Scarlet Runner, per bushel 1 6-2 0	Salad, small, per doz. punnets 1 6
Cucumbers, home-grown, select, per doz. 2 0-2 6	Shallots, per lb. 0 2
— India, per dozen 0 9-1 0	Tomatoes, selected, per doz. lb. 3 0-3 6
Garlic, per lb. 0 2	— Medium, doz. 2 0-2 6
Mushrooms (indoor) per lb. 0 6	— Seconds, do. 1 0-1 6
	— Channel Islands, per lb. 0 2-0 3

POTATOS.

Arrivals have been light the last few days, and prices a shade firmer. Present quotations range from 60s. to 95s. John Bath, 32 and 34, Wellington Street, Covent Garden, W.C.

SEEDS.

LONDON: Sept. 1.—Messrs John Shaw & Sons, Seed Merchants, of Great Malze Pond, Borough, S.E., report rather more business now passing in seeds. For Trifolium there is a moderate sale at the very low rates current; supplies appear falling off somewhat. Full prices are realised for Mustard and Rape seed. This season's winter Tares are good, cheap, and abundant. Rye is still scarce and dear. For Canary seed the tendency of values is distinctly upwards. The supply of Hemp seed is still short. New English Peas offer reasonably. Haricot and Butter Beans are advancing in price. Linseed is quiet.

FRUIT AND VEGETABLES.

GLASGOW: Sept. 1.—The following are the averages of the prices current here during the past week:—Pears, 3d. to 8d. per lb.; Apples, 4d. to 6d. do.; Plums, 4d. do.; Tomatoes, Guernsey, 3d. to 4d. do.; do., Scotch, 6d. to 7d. do.; Grapes, home, 1s. 6d. to 2s. do.; do., foreign, 6d. to 1s. do. Vegetables:—Golden Ball Turnips, 1s. 6d. to 2s. per doz. bunches; Cabbages, Scotch, 6d. to 8d. per dozen; Cauliflowers, Scotch, 1s. 3d. to 1s. 6d. per bunch; do., Dublin, 2s. 6d. do.; Parsnips, 5s. to 6s. per cwt.; herbs assorted, 1d. to 2d. per bunch; Mint, green, 6d. do.; Onions, Dutch, 3s. 6d. to 4s. per bag; do., Portugal, 1s. per stone; Parsley, 9d. to 1s. do.; Potatoes, best, 8d. to 10d. do.; Carrots, 10d. to 1s. per dozen bunches; Peas, 5s. to 10s. per cwt.; Cucumbers, 4s. to 4s. 6d. per dozen; Lettuces, round, 6d. to 8d. do.; do., Cos, 6d. to 8d. do.; Radishes, 4d. to 6d. per dozen bunches; do., London, 1s. 6d. do.; Horseradish, 2s. 3d. to 2s. 6d. per bundle; Beans, Broad, 1s. per stone; do., French, 3s. 6d. to 4s. per sieve; Mushrooms, 1s. per lb.; Beetroot, 4d. to 5d. per bunch; Mustard-and-Cress, 3d. per punnet; Spinich, 2s. to 2s. 6d. per stone; Rhubarb, 1s. 6d. to 2s. per cwt.

LIVERPOOL: Sept. 1.—Average of the prices at under-noted markets:—St. John's Potatoes, 1s. to 1s. 4d. per peck; Peas, 8d. to 1s. do.; Cucumbers, 3d. to 6d. each; Grapes, English, 1s. to 2s. 6d. per lb.; do. foreign, 4d. to 6d. do.; Pines, English, 5s. to 7s. each; do. foreign, 1s. do.; Mushrooms, 6d. to 1s. lb.; Birkenhead Potatoes, 10d. to 1s. peck; Peas, 1s. to 1s. 6d. do.; Cucumbers, 2d. to 6d. per lb.; Grapes, English, 1s. 6d. to 2s. 6d. per lb.; do., foreign, 6d. to 8d. do.; Pines, English

4s. 6d. to 7s. each. North Hay; Potatoes, Early Regent, 2s. 6d. to 4s. per cwt.; Kidneys, 4s. to 4s. 6d. do.; Turnips, 4d. to 6d. per dozen bunches; Swedes, 1s. 6d. to 1s. 9d. per cwt.; Carrots, 6d. to 8d. per dozen bunches; Onions, English, 7s. to 8s. per cwt.; do., foreign, 4s. 6d. to 5s. do.; Parsley, 4d. per dozen bunches; Lettuces, 4d. to 6d. per dozen; Cucumbers, 1s. 6d. to 2s. 6d. do.; Cauliflowers, 8d. to 1s. 6d. do.; Cabbages, 6d. to 1s. do.; Celery, 1s. 3d. to 2s. per dozen.

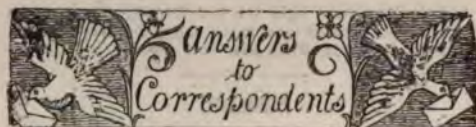
CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending August 28, and for the corresponding period of 1895, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1896.	1897.	Difference.
	s. d.	s. d.	s. d.
Wheat	22 5	31 8	+ 9 3
Barley	21 10	22 5	+ 0 7
Oats	13 7	17 1	+ 1 6

CATALOGUES RECEIVED.

FRED. SMITH & CO., Woodbridge, Suffolk—Bulbs.
ALEX. CROSS & SON, 19, Hope Street, Glasgow—Bulbs, &c.
JNO. WOOD, 8, Corn Market, Penrith—1, Bulbs; 2, Apples.
FUTHERINGHAM & KINO, Corn Exchange, Dumfries—Bulbs.
A. ROBINSON, 1A, Bishopsgate Without, City—Bulbs, Rose and fruit trees, &c.
CLARK BROTHERS & CO., 65, Scotch Street, Carlisle—Bulbs.
THOS. WALME-LEY, JUNR., Lichfield—Bulbs.
E. H. KRELAGE & SON, Bloemhof Nurseries, Haarlem, Holland—Bulbs.
AMOS PARRY, Winchmore Hill, London, N.—Bulbs, and General hardy herbaceous and border flowering plants.
W. J. WATSON, Town Hall Buildings, Newcastle-on-Tyne—Bulbs.
DOBIE & MASON, 22, Oak Street, Manchester—Bulbs.
E. WEBB & SONS, Wordsley, Stourbridge—Bulbs and Flower-roots.
ARMITAGE BROTHERS, LTD., Nottingham—Bulbs.
DICKSON & ROBINSON, Manchester—Bulbs and Roses.
COLLINS BROTHERS & GABRIEL, 39, Waterloo Road, London, S.E.—Bulbs.
FRANK DICKS & CO., 46, Deansgate, Manchester—Bulbs.
MCKENZIES, LTD., Camden Quay, Cork—Bulbs.
—MAILLARD, 5, Place de l'Eglise à Choisy-le-Roi, Horticultural Buildings.
C. PETRIK, Ghent, Belgium—Palms, Azaleas, Rhododendrons, Laurels.
MAX BÖNTZEL, Nieder-Schönweide, Berlin—Fruits, Roses, &c.
KENT & BRYDON, Darlington—Bulbs.
W. P. LAIRD & SINCLAIR, Dundee and Cupar, Fife—Bulbs.



BOOKS: *Perplexed Reader, My Gardener*, by H. W. Ward, and published by Eyre & Spottiswoode, East Harding Street, E.C.; *Villa Gardening*, by Ed. Hobday, and published by Macmillan & Co., Bedford Street, Covent Garden, W.C.

CORRECTION: In report of Eastbourne Show in our last issue, the second paragraph should commence Mr. Offer, gr. to J. Warren, Esq., Handcross Park.

COVERING OF A SLATE ROOF OF A COACH-HOUSE: X. Y. Z. Crimson Rambler Rose, as you suggest, would answer the purpose, and being of rampant growth, it would not be long in covering the roof. You might plant the climbing Rose Innocente Perpétue, a white-flowered Polyantha Rose of rapid growth and great floriferousness; or Wistaria sinensis, or Clematis flammula, a species with deliciously-scented flowers; or C. montana, early-flowering white, and many other varieties of Clematis. Sweetwater Vines, and Aristolochia Siphon might be thus employed.

CUCUMBERS: E. S. W. The specimen you have sent us affords no evidence of disease.

EARWIGS: W. S. E. Cut hollow stems of Bamboo into one-foot lengths, and fasten several of them to each Peach tree. The earwigs will hide in the stems, and if frequently examined, a large number may be destroyed.

FRUITING OF ARACARIA IMBRICATA: C. Sewery. It would be prudent on your part to greatly reduce the number of cones on the trees. In younger trees than yours the profuse bearing of cones would be a sign of deterioration and decay of vigour, but in trees fifty-five years planted this may not be the case; still, a reduction of the number is advisable.

FUNGUS IN SPENT HOPS: C. D. C. The Parasol Mushroom (*Lepiota procera*), very good eating. M. C. C.

FUNGUS ON CARNATIONS: W. J. C. Timely applications of the Bordeaux Mixture would doubtless ward off attacks of fungus, but nothing we at present know of will destroy it when once it has entered the tissue of the leaves. You do not tell us what species of fungus has attacked the "other plants." For mildew, flowers-of-sulphur, distributed with a muslin-dredger, usually suffices. The formula for the Bordeaux Mixture was given in our issue for July 3 last, p. 12. A very convenient remedy, when only a small quantity is wanted, consists of potassium-sulphide, 1 oz.; water, 3 gallons.

FUNGUS ON CARNATION: C. Abbot. Early stage of fungus, possibly *Heterosporium*, but too immature for determination. Why not try spraying with one of the copper solutions? M. C. C.

FUNGUS ON CHRYSANTHEMUMS: A. J. R. *Uredo Hieracii*, on Chrysanthemums. I am not aware of its having been found previously in this country upon Chrysanthemums, but it is common on other composite plants. M. C. C.

FUNGUS ON PHLOX: A. Hill. The material sent for examination is too scrappy to enable us to arrive at any conclusion. G. M.

FUNGUS: A. D. W. The mycelium of a kind of "dry-rot," but no name can be given to it in the imperfect stage. M. C. C.

FUNGUS: W. B. H. *Agaricus* (*Pholiota*) *spectabilis*, never eaten, but not really known to be poisonous. A very different thing from the Beefsteak fungus. M. C. C.

GARDENER'S PERQUISITE OF HOUSE COAL: B. B. When the gardener resides on the place, and there are glasshouses to be heated, it is customary, in the London district, for the employer to supply coals. When the gardener resides off the premises coals are not given, but then the wages are increased in proportion.

INSECTS IN POTATO LAND: W. A. C. Those sent are millipedes (*Julus guttatus*), which feed on decaying vegetable, and more or less on animal matter. Trench the land deeply after dressing it with gaslime and soot. Set traps of Potato and Carrot, 6 inches deep, and 2 feet apart over the land. The creatures are not injurious to any great extent to living plants. Keep the ground stirred with the digging-fork when it is not covered with vegetation.

LILUM AURATUM: E. W. R. The deeply-coloured variety is the somewhat rare *A. rubro-vittatum*.

MEDLARS: R. S. M. Gather when ripe—that is, when they part easily from the shoots, and store them like Apples till they are bletted, and not before this change takes place are the fruits fit for consumption or making jelly. Jelly is made in the ordinary manner, but it should be strained to clear it of the cores and stones.

NAMES OF FRUITS: J. Boltrill. Apples: 1, Red Astrachan; 2, Irish Peach.—Ignorant. 1, Not sufficiently developed to recognise; 2, Windsor? 3, Lemon Pippin; 4, Williams' Bon Chrétien. Hamilton. 1, Ecklinville seedling; 2, Bramley's seedling; 3, Emperor Alexander; 4, Duchess of Oldenburgh; 5, Lord Suffield; 6, Alfriston.—A. L. Peaches: 3, Noblesse; 4, Bellegarde. Nectarines: 1, Stanwick Elruge; 2, Violette Hative. Peaches are difficult subjects to name with certainty.—Macom. 1, Early Red Juneating; 2, Irish Peach; 3, Red Quarrenden; 4, Lord Suffield.—A. P. The Grape you send is a most agreeable one. The skin is thin, flesh juicy, and of pleasant sweet flavour. It is Royal Muscadine, a very variable Grape, according to locality and conditions of treatment. It is sometimes more richly flavoured than those you send.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—H. W. 1, *Davallia hirta cristata*; 2, *Adiantum elegans*; 3, *Adiantum Waltoni*, both garden varieties; 4, *Adiantum concinnum*.—J. B. W. *Lycaste Deppei*.—R. N. H. 1, *Oncidium prætextum*; 2, *Oncidium Forbesii*; 3, *Odontoglossum Wallisii*.—J. C. & Co., Bradford. The abnormal flower of *Cymbidium Lowianum* is very singular in having two perfect and one imperfect labellum. The other is the racemose form of *Cynoches peruvianum*.—Fr. de Laet. *Basella rubra*.—J. Wright. *Erigeron aurantiacus*.

NARCISSUS FOR MARKET: H. A. D. The following varieties, amongst others, are grown by a most

successful market gardener:—Emperor, Princess, Golden Spur, Tenby, Edward Horsefield, bicolor grandis, Minnie Princess, Mary, Cynosure, Barri conspicuus, Stevenson, Maurice Vilmorin, poeticus, variety postarum, John Bain, Orange Sulphur Crown, Nelson Major, J. B. M. Madame de Graaff, Captain Nelson, C. house, Beauty, Gloria Mundi, Leedsii, Mrs. Langtry, Duchess of Westminster, White Japanese Anemone and *Gladiolus* are demand in the market. Whether the produce will pay or not must depend upon the management and astuteness to grasp the peculiarities of the market, which will help dispose of your produce at the best price.

NUTS: St. A. Filberts should be gathered with husk has almost entirely changed from a brown colour; if left till quite brown, it will drop out of the husk. Spread the paper or clean garden-wa's in a vinery or for a fortnight, afterwards storing the thin layer on the fruit-room shelves; if not intended for long keeping; the latter, put them into large clean pl. whelming another large pot, or some large slates over these, and keep in a cool, not cellar, or bank them over with modern earth or sand. The object aimed at is to kernels from shrivelling, but without germination during the winter, and the early decay. Some persons slightly spritz Nuts with salt when storing them in pots.

ORNAMENTAL FENCE, NORTH SIDE OF A ROCK: X. Y. Z. *Barbaris*, *Darwinia* as you suggest answer admirably for covering the fence, if fastened to it; *B. senophylla* would like well, and it flowers abundantly. Some of the growing *Ivies* would answer the purpose. *Canariensis*, *rhomboides*, *digitata*, *poetica* the spot is not reached by the sun, *Rosa* not likely to give satisfaction. If you are in a southern county you might plant *sil* double-flowered *Camellias*, and *Escallonia* against the fence.

PATUNIA BLOOMS: J. W. There is nothing able in this seedling variety.

PITIOSPORUM EUGENIODES: T. C. H. This can be easily propagated from seeds cuttings. The latter may be either half ripened, and should be inserted in light s in a close propagating-case, in a temper from 55° to 60°. Shade until roots are The nurseryman sometimes propagates from eyes also, just as the Americans do. In this system, though more economical, considerable care and experience.

SHOW GOOSEBERRIES: J. G. Red: A. Bollin Hall, Conquering Hero, Dan's Eskender Bey, Highlander, London, Slaug Speedwell, Talfourd, Wonderful. Yellow date, Catherine, Criterion, Drill, Hue, Leveller, Leviathan, Mount Pleasant, P way, Trumpeter. Green: Fearless, Green London, Lofly, Matchless, Plunde Stockwell, Telegraph, Thumper, Tom Join out. White: Antagonist, Brackley Hero, Coppice Lass, Freedom, Hero of the Nil Lind, King of Trumps, Queen of Trump drift, Snowdrop.

TOMATO DISEASED: J. P. The fruits affected with *Cladosporium Lycopersici*, Spot," a pernicious fungus, described an in these columns, October 1, 1887. The known cure, but the fungus may be kept early dressings of the Bordeaux Mixture temperature and dryish air, with ventilat and day, weather permitting.

WIREWORM AND PARASITE: S. & S. Th attached in two parallel rows to the be wireworm are pupæ of minute Hyme parasite, which as larvæ lived inside. Interesting case, and I will endeavour to perfect insects, and discover to what sp belong R. McL.

COMMUNICATIONS RECEIVED.—W. Thursby.—J. A.—J. Smith.—A. H.—G. F.—H. A.—F. de La Hornechurch.—J. B.—W. L.—G. Andrews.—York.—D. T. F.—E. C.—G. H. S.—T. H.—M. D.—J. Douglas.—T. Brown.—E. J. L.—Enquirer.—T. B.—E. B.—H. C.—G. H. S.—Cannell & Sons. (Shortly).



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 11, 1897.

PIORA.

BUT it is time to come to the flowers, and in speaking of them I feel almost compelled to speak in what might well be called exaggeration and with a too great use of superlatives; but it is really impossible to speak of the flowers of Piora without using superlatives, and what seems like exaggeration. Before I left England I had been told by more than one friend well versed in flowers generally, and especially in alpine flowers, that in no part should I find such a paradise of flowers as at Piora. So I went in faith, and they really far exceeded my wildest expectations. I took with me Gremli's *Swiss Flora for Tourists*, published in English by Nutt, in the Strand—a most excellent little book, which I can strongly recommend to all who go to Switzerland in search of flowers. I can also recommend, but not so highly, Correvon's *Flore Colorée de Poche*, published in Paris. It has some fairly good plates, which are helpful, but it only records the more conspicuous flowers, and is not exhaustive, as is Gremli's. Now, Gremli describes 2637 Swiss plants, including Ferns and grasses, but without the mosses, fungi, and lichens, which of themselves must be a study; and I feel quite sure that within a radius of 3 miles or less from my hotel it would be quite possible for a good searcher to find more than one-half of these 2637 plants. I was not searching for plants, I simply admired and gathered those that were near the paths in my rambles; and yet the number of different plants that I saw—many of them seen wild for the first time—were a constant delight, and a delight that was varied every day and in every walk. It was not only the large number of species, but it was the large number of the individuals of many species that was to me so remarkable and noteworthy. I will name a few. The *Gentiana acaulis* was a little past its best, but it was still abundant; and I am not exaggerating when I say that during the week I was there I must have walked over acres of the gem-like *G. bavarica*. I had no idea that I could anywhere see it in such masses, and it seemed to be in no way particular as to its position; it was abundant, and perhaps most abundant, in the damp ground near the lakes, but it was also found in many high places. The whole place was especially rich in *Gentians*; besides the *G. acaulis* and *bavarica*, there was *G. lutea*, *cruciata*, *punctata*, *asclepiadea* (not yet in flower), and *germanica*. This last one I was especially pleased to see: it is a British plant, and I know it well, especially on the Cotswolds. But there is a great difference between the British and the Swiss plants, and it is a difference which shows how largely the colour of flowers is affected by their soil, situation, and especially, perhaps, their elevation. In England

the flower is a pale blue; at Piora the colour is as brilliant as that of *G. bavarica*, which it so much resembles at first sight that it is not till you take the plant in your hands and see that it has an annual root, and that it has many flowers in its little stem instead of the one flower that *G. bavarica* carries, that you see the difference. As with *G. bavarica*, so it was also with the Bird's-eye Primrose (*P. farinosa*). It was everywhere in hundreds, and you could not help treading on the little beauty. I do not think it was finer than I have seen it at Malham and Ingleborough, in Yorkshire; but I saw many specimens of a far richer and deeper colour than I have seen in England. The alpine Rose was everywhere, and was in its fullest beauty at that high elevation, though near Hospenthal it was almost past flowering. I delight in the Alpenrose, not only for its bright flowers, which give such a colour to so many Swiss hill-sides, but because it is the only *Rhododendron* (except *R. dahuricum*, which some consider only a geographical variety) that will grow on soil charged with lime. To me the faint smell is rather pleasant, though to some it is quite unpleasant; and at Piora I learned two facts about it which I had not noted before. There is here and there wet marshy ground on the hill-sides, not bad enough to stop a walker, but enough to make his feet damp. I noticed that wherever I could see an Alpenrose the walking was good and firm, though it may have appeared to be growing in a marsh. The other thing I learnt about it was, that it gives most valuable protection to many plants. I suppose it is not grazed by cattle, sheep, or goats, and the result is that many good plants come up right in the midst of the bushes, and are, I suppose, protected by them. I found many grand specimens of *Aquilegia alpina* growing thus; also *Streptopus amplexicaulis*, and others; and nestling round the outside of the bushes, and well protected by them, I found *Maianthemum bifolium*, *Pyrola rotundifolia*, and other gems. And I think it was worth all the journey to Piora if only to see the St. Bruno's Lily (*Paradisica liliastrum*) in flower. The first flowers were showing themselves when I was there; but I am told that when in full flower the hill-sides are white with them, and that they can be gathered in sheaves. I have grown it for many years and admired it, but I never realised its supreme beauty till I saw it on its native hill-sides. There surely can be no flower more thoroughly beautiful, while the whiteness of the flowers is the nearest approach to absolute purity that can be conceived. I shall never forget it as I saw it first at Piora. Growing with the St. Bruno's Lily, and in many other places, was a large quantity of the fine yellow Alpine *Anemone* (*A. sulphurea*), which I had seen before in its full beauty on the Furka Pass, where one hill-side was so covered with it that at a considerable distance the whole hill-side looked yellow; but at Piora the time of flowering was past, yet the beauty was not gone, for the heads with their many-feathered seeds were very beautiful.

It is very tempting to say more of the many beautiful flowers that I saw, but time and space would fail me—but there is one plant that I must on no account pass by. The Cobweb Sempervivum (*S. arachnoideum*) is everywhere, clinging to chinks in the rocks, and of wonderful beauty; there were many small patches of it which I could only compare to brooches set with brilliant jewels, the outside of each rosette being a pale rose, and the inside a glit-

tering spot formed by the cobweb that joins together every leaflet of each rosette. This likeness is increased by the fact that on all that I saw at Piora the rosettes were very small, and unopened, except to a small extent. I fancy that late in the year the rosettes expand and become flat, but they are so closely packed that it is hard to see how they can find room to expand. I was none the less glad to see the little beauty growing in such abundance and beauty, because I have never succeeded in growing it. In England it is a most capricious plant, growing well in one garden, and in another with apparently the same surroundings utterly refusing to live. And I must add another charm that the flowers give to the walks at Piora—there is an abundance of sweet-scented flowers. Among these there are two small Orchids of very delicate and pleasant scent—the little black Orchid, *Nigritella angustifolia*, and *Gymnadenia odoratissima*; the *Nigritella* being fairly abundant, and the *Gymnadenia* not so frequently met with. These, however, do not give out their scent till sought for, and so do not account for the pleasant smells that are met with in the walks unsought. Much of this comes from the Alpenrose; and after rain the Sweet Briar bushes scattered through the woods give out their well-known scent. But there are two low-growing plants which, as I think, fully account for the pleasant scents; the one is our own Thyme, which is everywhere. But I think the chief scent is given out by the pretty alpine Milfoil, *Achillea moschata*; it is very abundant, and when crushed gives an aromatic, musky smell.

For plant-collectors, as distinguished from plant-lovers, Piora is a delightful place. I was not collecting plants; I was simply looking for them to see them in their native habitats, and to admire them in their native beauty. But I wished I could have collected the native plants and taken them home, for I do not remember ever to have seen a place in which they could be collected so easily and with such almost certainty of success. The lower parts of the hills, which alone I examined, are composed of *débris* formed from the stones that have come down from the rocks above, and are covered with and permeated throughout by a rich humus, which is practically all decayed leaf-mould. The stones are not of a large size, and it is very easy to remove them; with a little help from the alpenstock they can one by one be removed, and then the root, though often penetrating the humus to a great distance, remains exposed, and the whole plant can be taken up without injury. And at Piora there is little fear of the most greedy collector doing any real destruction; he may help himself as largely as he likes with a very clear conscience, and he will do little harm for those who come after him. As an instance of the ease of taking up difficult plants there, I may say that the evening before I went away I wished to find some seedlings of the handsome *Gentiana punctata* which I had marked by the lake-side not far from the hotel, for I knew that a full-grown *G. punctata* has a big root which it is almost hopeless to attempt to dig up with any chance of success. I soon found the plants, and among them many little ones that seemed exactly what I wanted. But I soon found they were no seedlings; the little bunch of radical leaves concealed a root-stock more than an inch in diameter, and it took several minutes of work with the alpenstock to follow the root to the end, and then it turned out to be nearly a yard

in length, with many ramifications, but the nature of the soil allowed me to get all I wanted without any injury to the roots. All collectors should remember that it is of the first importance not to bruise or break any of the roots; if they are bruised or broken, Nature's first work is to heal the wounds, and while so doing little other work is done by the plant, and if they are badly bruised and are a long time out of the ground and so get dried, death is almost certain. Collectors should also remember that it is labour in vain with a great many plants to take them from a soil of one marked character and transplant them into another. All the plants at Piora grow in the *débris* of primary rocks at a high elevation; many of them, like the *Rhododendron*, will grow anywhere, but a very large number, the majority perhaps, will simply die when removed to a soil composed of lime or chalk at a low elevation. I feel sure that the mountain air is a great factor in the vigour and abundance of Alpine plants, and in many instances in the colour of the flowers, and cannot help thinking also that the reduced atmospheric pressure which the flowers get at high altitudes has its influence upon their healthy growth. *H. N. E., in the "Guardian."*

NEW OR NOTEWORTHY PLANTS.

LÆLIO-CATILEYA × BROOMEANA.

SEVERAL plants described as "remarkable *Lælias*" were imported from Brazil by Joseph Broome, Esq., of Sunny Hill, Llandudno, and this one now flowering fully bears out the description, though the question of its being a natural hybrid or of garden origin must remain unanswered. In certain particulars it has a resemblance to some of the finest forms of *L. C. × elegans*, although differing widely in having petals which differ in shape from any form of that variety, and almost as broad as those of some of the large-flowered *Cattleyas*. The lip, too, differs, the front lobe being merely separated from the side lobes as though by a notch on each side, and not carried forward on an isthmus, as seen in some degree in forms of *L. C. × elegans*.

The flowers measure about 6 inches in width; all the segments are well displayed, and of good substance, and bright colour. The sepals are 1 inch wide, and 2½ inches long; the petals ovate, and not pointed, as in other varieties which might be classed with it; nearly 2 inches in width, and 3 in length. Both sepals and petals are of a clear rosy-mauve colour, the petals furnished with slightly darker veining. The side lobes of the lip are pure white, the tips coloured purple-rose. The broad, flat front-lobe of the lip is of a rich crimson-purple colour, a purple band extending to it from the base, and its surface bearing a raised veining of claret colour, with a slight tinge of orange. It is one of the finest and most distinct of its class, and it is a pity that its origin cannot be more definitely stated. *James O'Brien.*

CHERRIES, THEIR CHEMICAL COMPOSITION.

BEFORE the Cherry season of 1894, requests were made by the authorities of the College of Agriculture of California, to a number of prominent orchardists for average samples of Cherry varieties grown by them. A few were received in full-ripe and excellent condition, and submitted to analysis, with results as follows:—

No. 1. Variety Royal Ann, from Chico, Butte County.—The Cherries were in excellent condition, quite large, and marked in colour as characteristic of the variety; the flesh was hard and firm, and easily separated from the pit, juicy and sweet.

No. 2. Variety Black Tartarian, from Chico.—A typical sample of the variety.

No. 3. Variety Royal Ann, from Newcastle, Placer County.—A pleasant-tasted fruit, somewhat smaller than that received from Chico (No. 1), but beautifully marked.

No. 4. Variety Black Tartarian, from Newcastle.—A very sweet Cherry, though smaller than the others examined of the same name; colour good.

No. 5. Variety Black Tartarian, from San José, Santa Clara County.—A very sweet fruit, somewhat larger than the Newcastle sample (No. 4), and resembled much in colour and size that grown at Chico (No. 2).

No. 6. Variety Napoleon Bigarreau (Royal Ann), from San José.—In size much like the other Royal Anns, but of higher brown colour, which spread over the surface of the fruit, giving it a rich appearance.

The largest Cherries were found to be Royal Ann, from Newcastle and San José, respectively, of which 54.1 made a pound. The smallest was the Black Tartarian, from Newcastle, which required 72.9 to make a pound.

The highest flesh percentage was found in Royal Ann, from Newcastle, 93.7 per cent.; that of Royal Ann from Chico coming very near to it with 96 per cent. The Black Tartarian from San José contained the least flesh, viz., 94 per cent., but at the same time was the juiciest fruit. The driest flesh was that of the Royal Ann from San José (No. 6), which had but 79.1 per cent. of juice in the flesh. Nos. 3 and 4 possessed but little advantage in this respect over No. 6, yielding about 81 per cent. juice in the flesh.

Of sugar content in the whole fruit there were some differences, but not so great as found in some other fruits. The Black Tartarian Cherry from San José (No. 5) yielded the most sugar, 12.75 per cent., and this was the most juicy Cherry examined. Aside from this sample there was but little choice, as the others showed upwards of 10 per cent., leaving out the minimum, viz., 8.98 per cent., found in the Royal Ann from Chico (No. 1). These Cherries, with an average of 10.96 per cent. sugar, resemble Apricots, which average at this station 11.1 per cent. sugar. European-grown Cherries show 10.24 per cent. sugar in the fruit, this being one of the few instances where European and Californian fruits show agreement in this important ingredient.

Of acid there was no great variation noted, ranging from 0.3 to 0.5 per cent., or about as much in amount as is quoted for Californian Prunes, Plums, and Peaches.

Nitrogenous materials (albuminoids) exist in the flesh or edible portion of Cherries in a very considerable quantity. We note a variation in the albuminoids of the flesh of Cherries of from 1 to 1½ per cent., giving an average of 1.2 per cent. for all, being the same as is given for Apricots. This figure, viz., 1.2 per cent., is the highest for these nitrogenous materials, excepting that of Figs, which show 1.5 per cent., and therefore places the Cherry, as compared with other, on a high footing as to content of flesh-forming matters.

König gives, as an average of nine analyses of European Cherries, only 0.67 per cent. albuminoids in fresh fruits, or about one-half as much as found in the Californian Cherries.

The ash-percentages of Cherries are remarkably alike, averaging 0.44; only one lot, No. 6 (Royal Ann), reaching over half per cent., with 0.521. Nor does this fruit withdraw from the soil any more plant-food material than do Prunes, Plums, and Apricots, which contain respectively 0.486, 0.62, and 0.508 per cent. ash. Turning now to the composition of the ash of Cherries, it was found that over one-half is composed of potash, and that the next largest ingredient was phosphoric acid, 15.11 per cent. Only one other fruit-ash—that of Grapes—contains more phosphoric acid, or as 21.24 per cent. against 15.11; Prunes come next, with 14.08 per cent. phosphoric acid in ash.

As to lime in the ash, the Grape, Prune, Apricot, and Cherry, all show about 4 per cent.—very much less than that in the Orange, Lemon, and Fig ashes. Sulphuric acid in the Cherry-ash is high—even more than quoted for Oranges—5.83 against 5.25 per cent.

Composition of the Ash of Cherries.

Constituents.	Black Tartarian Cherry from San José, California.	European Cherry.
Percentage of ash in fresh fruit ...	0.482	0.20
Percentage composition of ash:—		
Potash	57.67	51.5
Soda	6.80	2.19
Lime	4.20	7.47
Magnesia	5.49	5.46
Iron oxide	1.12	1.98
Manganese	0.82	...
Phosphoric acid	15.11	15.97
Sulphuric acid	5.83	5.09
Silica	1.13	0.04
Chlorine	1.33	0.95

Taking the figures as given for the Californian Cherry, it is found that this fruit extracts from the soil by its growth the following amounts of nitrogen, potash, phosphoric acid, &c., in each 1000 lb. of fresh fruit as gathered.

Soil Ingredients abstracted by 1000 lb. of Fresh Cherries.

Nitrogen	2.29 lb.
Potash	2.77 "
Phosphoric acid	0.72 "
Other ash ingredients	1.33 "

These figures are very similar to those required for the same weight of Apricots; it may, therefore, be concluded that for Cherries, when manurial fertiliser becomes necessary, a nitrogenous as well as a phosphatic manure will be required first, leaving the potash fertiliser to follow at a later period.

The high sulphuric acid contents in the ash of the Cherry, as in that of the Orange, may suggest the early use of a dressing of superphosphate of lime, gypsum, or old mortar rubbish, as these will help to make available the potash already present in a latent condition in the soil. *J. J. Willis, Harpenden.*

NEW VARIETIES OF CARNATIONS.

It has been urged repeatedly by amateur florists, that in order to obtain success in the cross fertilisation of plants, one subject only should be dealt with. Mr. Martin R. Smith has worked with the Carnation only, and has thoroughly mastered the intricacies connected with the cross fertilisation of that plant. His work in producing from seed a new type of Malmesbury Carnation is evidence of originality in one direction; but he has also marked out a new line, all his own, in border Carnations, and has advanced quite as far in this section, having produced varieties possessing qualities in the form and colour of the flowers, and in the habit of the plants hitherto unknown. Nothing at Hayes is left to chance, and a record is kept of all the crosses made, which are carefully tabulated.

The experience thus gained had led Mr. Martin Smith to a strong belief in the prepotency of the pollen-parent, a belief, however, which has been somewhat shaken by the results obtained from this year's seedlings, a very large number of which have closely followed their seed-parent in habit, form, and colour.

The importance, however, of this negation of previous experience is, in Mr. Martin Smith's opinion, much diminished by the practical impossibility of knowing with certainty what pollen has really fertilised the seed. The flower may have been self-fertilised or affected by pollen carried by the wind before being crossed by the operator. A few instances, therefore, in which the influence of the pollen-parent is plainly discernible, are more convincing to the mind than would be many apparently pointing to an opposite direction, as the value of such results is always neutralised by the doubt which will fail to arise as to whether the cross was in very truth what it professed to be.

A few results have been obtained which may be considered practically established: for instance, that the crossing of parents of the same colour, rose with rose, scarlet with scarlet, or yellow with yellow, will produce a very large preponderance of seedlings of the same colour; but when parents of different

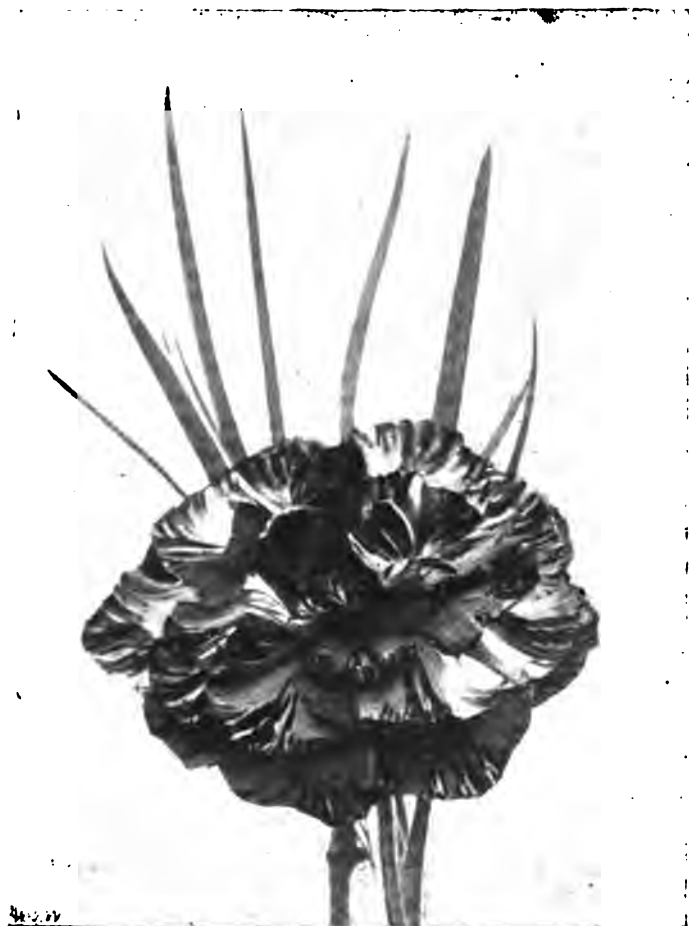


FIG. 49.—FANCY CARNATION HIDALGO.

Exhibited first in 1896. Size of bloom 3 inches; yellow ground, streaked and margined with crimson. (See p. 174.)



FIG. 51.—CARNATION CINNAMON.

Size of bloom 3 inches; colour cinnamon or apricot; petals large, and smooth on the edges. (See p. 174.)

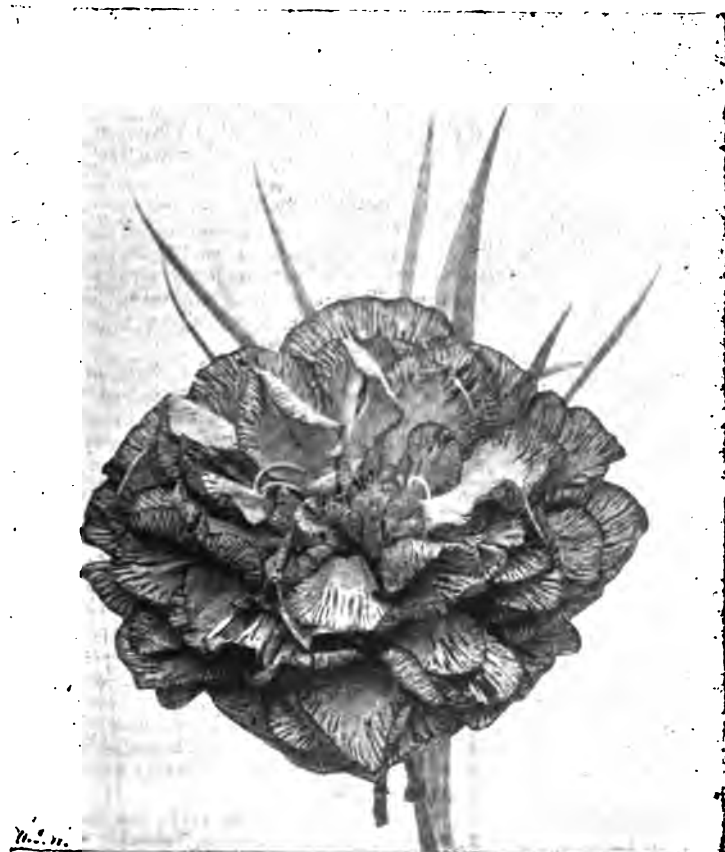


FIG. 50.—FANCY CARNATION CZARINA.

Size of bloom $3\frac{1}{2}$ inches; deep yellow ground, margins marked with red lines. Flowers large and full. (See p. 174.)



FIG. 52.—CARNATION: REGENT.

Size of bloom 3 inches; buff ground-colour, heavily marked with purplish-red. (See p. 174.)

colours are used, their progeny will be found of every conceivable tint, and experience so far can trace no rule or method in the matter.

Further, it would appear that the crossing of two strongly-opposed colours, such as yellow and purple, yellow and maroon or scarlet, has a distinct tendency to produce white.

The inter-crossing of yellow ground fancies will result in an almost exclusive return of yellow ground fancies, and as is well known the inter-crossing of flakes or bizzars will give a vast preponderance of flowers with the same distribution of colour.

Yellow would appear to be the least stable of all colours, for the use of pollen from a variety of any other colour will, as a rule, entirely displace the yellow in the progeny; and in a cross of yellow upon a seed-parent of any other colour, but few, if any, yellows will be found among the seedlings. The prepotency in this case of the pollen parent will, as regards colour, be found without evidence, but may be clearly demonstrated in habit, petal, or calyx.

The usual tendency to "throw back" is observable, and Mr. Martin Smith mentions that from the crossing of a scarlet and a white, both seedlings from Germania, he this year obtained several yellow selfs.

It is certain that the whole of the seeds in the same pod are not equally affected by the pollen-parent. Some of the seedlings from it will be found bearing strong and undoubted evidence of the cross, and these will generally prove to be the pick of the lot; whilst others will take after the seed-parent, and a large percentage will show a tendency to revert to the "single" form from which the parent was originally developed.

In considering, therefore, the value of a cross between any two varieties, it is necessary first to eliminate much that is moderate or inferior. If but one seedling in a hundred is produced of very superior merit, and there is evidence that it is the genuine produce of the two varieties used, the value of the cross must be fixed by that one good seedling, and not by the ninety-nine which have had to be thrown away.

What Mr. Martin Smith is now striving for is good constitution, compact habit of plant, flowers standing boldly erect on stout footstalks and of good outline, and the outer petals smooth, well formed, and that do not reflex.

The six flowers we have figured on pp. 175, 177, were photographed by Mr. Stanley Wrightson, at Great Bookham, in the nursery of Mr. J. Douglas, who has taken over the available stock of the new Hayes seedlings. The varieties are a selection from 150, all named and classified with the greatest care. The flowers are slightly reduced in size.

REMARKS ON THE FRUIT CROPS.

(See Tables, ante, pp. 63 to 69)

WALES.

(Concluded from p. 160.)

CARDIGANSHIRE.—On the whole the fruit crops in this district are very poor, and especially Apples. There was a grand show of blossom, but cold winds and late frosts ruined them. Bush fruits have been very plentiful; Strawberries were good, but did not last long. *R. T. Williams, Crosswood Park, Aberystwyth.*

DENBIGHSHIRE.—In this garden Apples are a grand crop; the variety Starmer Pippin has failed, but this bore a very heavy crop last season. Pears are good, too, exceptionally so the varieties Williams' Bon Chrétien, Marie Louise, Doyenné du Comice, Beurré Diel, Beurré d'Amanlis, Beurré Superfin, Jargonelle, Josephine de Malines, Louise Bonne of Jersey, Marie Louise, and Catillac. *P. Fairbairn, Wynnstay Gardens, Ruabon.*

— Early and late Apples are excellent crops. Mid-season varieties were damaged by the frost when in bloom. Ribston Pippin and King of the Pippins are the best cropped among late varieties. *Henry Forder, Ruthin Castle Gardens, Denbighshire.*

GLAMORGANSHIRE.—Fruit-trees here never looked better than they did this spring; they were clean and

healthy, and free from insect pests of all kinds. Apple, Pear, and Plum trees were one mass of blossom, and promised well for an abundant crop; but the fruit did not set well, and a great many of the Apples dropped after they had grown to the size of pigeons' eggs. Of Apples, Lord Suffield, Cox's Orange Pippin, Ribston Pippin, King of the Pippins, and Alfriston are carrying good crops; while most other varieties have not more than half a crop. Pear-trees on walls and pyramids in the open quarters have about half an average crop. Plums are a complete failure. Strawberries were plentiful, and good in quality. *A. Pettigrew, Castle Gardens, Cardiff.*

— The fruit-crop in this district is much under average, especially Pears, Plums, Cherries, Peaches, and Nectarines. I never remember to have seen Peach-trees in such a bad state, and the cold weather in May killed many of the shoots. Apples in some gardens are a heavy crop, and the trees look clean and healthy, but in others there is much scarcity. All small-fruits have been plentiful. *R. Milner, Penrice Castle.*

MONTGOMERYSHIRE.—The season opened with great promise, there was an abundance of blossoms, and they were uninjured by frosts; but cold easterly winds following caused the leaves to blister, and the trees became badly blighted. Owing to this check the fruits did not swell, and consequently they fell off in great numbers. Damsons are quite a failure. *John Lambert, Ponies Castle Gardens, Wd'spool.*

PENBROKESHIRE.—All fruit trees bloomed well this season, and there being a total absence of spring frost a good crop of fruit was anticipated. But the weather was cold, wet, and sunless during the blooming period, and the fruits set badly. Then there was a sudden change to heat and drought, and most of those that had set dropped off. We have an average crop of Apples, the best being King of Pippins and Alfriston. *Geo. Griffith, Slebeck Park Gardens.*

— The following varieties of Apples are bearing good crops: Adams' Pearmain, Bramley's Seedling, D. T. Fish, Keswick Codlin, Lady Henniker, Lord Suffield, Ecklinville Seedling, Margil, and Tower of Glamis; all varieties of Pears are very thin, and the fruits small. *W. B. Fisher, Starkepole Court Gardens, Pembroke.*

IRELAND, N.

GALWAY.—The fruit crops, with the exception of small fruits, are almost a failure. Apples, Pears, Plums, and Cherries bore very heavy crops last year; this circumstance, combined with a very wet and sunless autumn, left the trees exhausted, and the wood badly ripened. The blossom was consequently unable to withstand the long period of cold and wet in the spring. *John Cobban, Garbally Gardens, Ballinasloe.*

KERRY.—The spring of this year was the most disastrous for outdoor fruit that I remember. There was an abundant show of blossom on all kinds of fruit trees, but for nearly three weeks there was cold weather, with hail and snow, and only the late-flowering Apples and Pears set any fruit. *Geo. R. Breeze, Killarney Gardens, co. Kerry.*

WESTMEATH.—The fruit crops in this district are on the whole fairly satisfactory. Apples are a fair crop, Lane's Prince Albert, Cox's Pomona, Ribston Pippin, and Blenheim Orange, being especially abundant and of good quality. Pears also are very good both on walls and standards, a few standard trees of the market variety, Heale, being weighed to the ground with fruit. The growth on Apples, Pears, Plums, and small fruit trees is exceptionally clean, strong, and healthy. *Robert Anderson, The Gardens, Waterstown, Athlone.*

WICKLOW.—In the early spring we had great promise, but the bitter east winds that prevailed here during April and May proved most damaging to the crops, especially to Plums, Pears, and Cherries. Of Raspberries we have had a very heavy crop of good fruit. Carter's Superlative is the favourite variety here. *D. Crowley, Powerscourt Gardens, Bray.*

IRELAND, S.

KILDARE.—The fruit crops are under average, owing to the severe frosts of March 30 (12°) and April 2 (11°), both of which were of ten hours' duration. Varieties of Apples carrying full crops are Lord Suffield, Blenheim Orange, and Northern Greening, and these all carried heavy crops in 1895 and 1896. *Fredk. Bedford, Straffan House Gardens.*

KING'S COUNTY.—The fruit crops are very indifferent; Cherries, Plums, and Pears are very few and poor in quality; whilst Peaches on open walls are a total failure, although there was an abundance of blossom. *T. J. Hart, Birr Castle Gardens, Partiltown.*

LIMERICK.—The present is the most unfavourable fruit season I have experienced. Pears looked very promising when in bloom, but cold east winds with frost set in, destroying the pollen, so that we are practically without Pears of any variety. Apples are only a partial crop. *J. Ellicott, Summerville Gardens, Limerick.*

CHANNEL ISLANDS.

GUERNSEY.—The crops of out-of-door fruits are abnormally poor. The trees bloomed fully two weeks earlier than in the two previous years. This of itself was a danger, but the subsequent weather has completed the evil, for it has been cold and cheerless—so much so, that the crops are now ten or twelve days at least later than in an ordinary season. Many of the fruits did not set well, those which did, advanced but little for a considerable time. *C. Smith & Son, Caledonia Nursery.*

JERSEY.—Apples are an abundant crop, the trees being loaded with fruit. Pears are scarce, owing to wind and frost when the trees were in bloom. All stone-fruits have failed. *Edwin John Ashford Nurseries, Queen's Road, St. Helier's.*

ISLE OF MAN.—The prospects of an excellent fruit crop were good early in the season, but the persistent cold and wet, and the high winds during June caused a very large proportion of the Apples, Pears, and Cherries to fall prematurely. Strawberries have been fine, and of good quality. *J. Murphy, Cronk-lourne Gardens, Douglas.*

BELGIUM.

EXHIBITION OF THE ANTWERP ROYAL HORTICULTURAL SOCIETY.

THE 166th exhibition of the above society was held in the new and handsome premises of the Royal Zoological Society, and was very successful.

The programme included non-competitive exhibits and others for competition; the former were the most numerous and important, many being contributed by Antwerp horticulturists who had not previously exhibited.

Two consignments of plants were particularly noticeable, that of about two hundred specimen plants sent by M. Florent Pauwels; the other from M. J. I. De Beucker, consisting of a series of representative plants illustrating the various forms of the globe, mingled with a dozen floral decorations, ranging from a bunch of Thistle bloom to an elegant arrangement of Lillium Harrisii and spathe of Anthurium.

The society instituted a new award for this exhibition, namely, a diploma of artistic merit to be awarded to the exhibitors whose arrangements showed good taste. Four diplomas were allotted; for plants and flowers from M. J. I. De Beucker; for the floral sprays of M. J. Smets-Troyman; the cut flowers from M. Raes-Daems, and fourthly to the planner of the exhibition, M. Guillaume De Borschere, who had successfully and artistically contrived the general arrangement of the hall.

A Certificate of Merit for rarity was accorded to M. F. De Laet for Echinocactus Trollietii. A cultural Certificate was awarded for Echinocactus Wislizeni and for Anthurium Rothschildianum, from M. A. De Smet.

be taken from house-grown plants, and undoubtedly the Tea, Tea hybrid and Noisette Roses are readily increased by this method.

Rose stocks for forming dwarf plants are universally raised by this method. The cuttings of ripe wood are taken in the autumn, and laid in by the heels till a wet or severe frosty day makes it necessary for an indoor job to be found for the men.

The Italian (Manettiae) stock is the one generally used. The cuttings are made from 9 to 10 inches long, and the lower buds cut off, leaving only two or three at the top of the cutting. They are then lined-in about 2½ inches apart in a sheltered border, and well trodden-in, and a sifting of cocoa refuse spread evenly over the soil among them to make a neat finish, and to keep an even temperature, and the moisture in the soil. Most of them will strike, and early in the following autumn every other plant may be lifted for potting to use for inside grafting, and those left will take a bud in June or July; but it is the practice to take out the soil to the depth of 3 or 4 inches so that the bud may be inserted below the ground line; and when this has started and somewhat hardened to fill up the soil level, covering the union, and so, in most cases, encouraging rooting from the base of the bud.

Speaking candidly, it is a pity the Manettii is so free and easy of propagation and working, for, except for a very few Roses, it is a most unsatisfactory stock. It is true the plants grow very vigorously in the first year, but each succeeding one they get weaker, and at last may be said simply to exist; while the stock, being of a very irrepressible nature, is constantly throwing up strong suckers from the bottom and killing the bud.

Many amateurs, and I might also say gardeners, cannot distinguish the stock from the Rose, and so in time—alas! a short time—the Rose-bed becomes all Manettii. A simple and efficient means to distinguish the stock from the Rose is that most, I may say all, H. P., Tea, and Noisette Roses have compound leaves, with two pairs of opposite leaflets and one terminal—in all, five; but the Manettii and multidora Roses, including Turner's Crimson Rambler, have seven, viz., three opposite pairs and one terminal. My advice to the gardener and amateur is, put a ban on Manettii stocks, using by preference the native wild Roses, *R. canina* and *R. arvensis*, either as seedlings or cuttings. I have had most satisfactory results from Briar cuttings which are thus made, and may be generally cut in plenty from the beds of standard Briars. Generally two or three laterals are allowed to each Briar, but two are ample; one finally, all good rosarians will say.

Remove all the superfluous ones, cutting close to the main stem, so as to secure a heel, and then shorten to about 6 inches. Line-in these cuttings about 3 inches apart, and tread up firmly, when most of them will root and be fit to take a bud the next June or July. Any weak or badly-rooted ones may be potted and then plunged for winter grafting. The next most generally useful Rose stock is the "Grifferaie," or, to give it its full title, Multiflora de la Grifferaie, which roots freely from cuttings of the ripe yearling wood, cut at a node, the cuttings being made about 8 or 9 inches long, disbudded at the base, and two-thirds embedded in the soil of the cutting-border; they may be budded as they stand, or be transplanted. On this stock all the strong-growing and climbing Tea and Noisette Roses can be worked, and the smooth-wooded perpetuals, such as Marie Finger, &c.

There are two more Rose stocks employed by French and some English growers to bud Tea Roses upon, one of which is desirable, as it not only imparts a neat pyramidal form to the bush, but causes a short and compact habit of growth, and great freedom of flowering. This is known as the Napoleon stock (*Rosa laxa*); on it such Roses as Madame Chedane Guinoisseau, Marie Van Houtte, and other useful Teas, make beautiful plants for pot-culture; and the last is *Rosa polyantha*, which is good for some Teas, and for all Noisettes, as well as for their hybrids. Both of these may be readily propagated from cuttings of the ripe wood, taken just at the fall of the leaf. *Experience.*

(To be continued.)

AMERICAN NOTES.

REFORESTATION.

A GREAT deal of interest in forestry subjects is being manifested in certain quarters. The efforts to secure a more reasonable management of the forests on public lands are especially strenuous. Of course, the present negligent apathy is due chiefly to ignorance of the value of the public woodlands, and of the feasibility of their systematic management. Any contribution to our knowledge of the actual facts is therefore especially timely. One of the best of recent publications dealing with such matters is a bulletin discussing the "Rate of increase on the cut-over timber lands of Minnesota," and issued from the Minnesota experiment station by Professor S. B. Green and Mr. H. B. Ayres. Besides giving acceptable statistics as to the extent and composition of the valuable lumber forests of Minnesota, the special question of the rate of increase on cut-over lands is answered as well as may be by giving several careful measurements. From these it appears that White Pine (*Pinus Strobus*, Linn.), left as scattering trees after logging, and cut at the age of 100 years (elapsed time since logging not given), has made an average annual increment of 1.5 cubic feet during the last ten years. White Pine first crowded, and then set free by fire, 125 years old, has given an average annual increment during the last ten years of .89 cubic feet. White Pine grown in the open, fifty-six years old, has made an average annual increment of 1.25 cubic feet during the last ten years. Norway Pine (*Pinus resinosa*, Ait.) left after logging, and cut at the age of 128 years, shows an average annual increment for the last ten years of .79 cubic feet. Norway Pine grown in the open (age not stated) gave an average annual increment of .96 cubic feet for the last ten years. Tamarac (*Larix americana*, Michx.), second growth, thirty-eight years old, showed an average annual increment of .46 for the last ten years.

APPLE CROP OF 1897.

As was expected, the Apple crop of the present year is considerably below the average. The Secretary of the National Apple-Shippers' Association estimates it at 60 per cent. of a full crop. The quality of the crop is not likely to be better than that of last year. The quality last year was good in spite of the large crop, but this year has been marked by weather favourable to the spread of fungous diseases and insect pests. Apple-scab is very bad in unsprayed orchards; but, fortunately, nearly all the commercial growers in America spray carefully every year. It seems probable that the price for first-class fruit this year will be considerably higher than last. Last year the English export market was demoralised by excessive shipments of poorly graded, poorly packed, poorly ripened fruit, for which shipping and storage facilities were quite inadequate. The Dominion government has now completed the arrangement of cold storage houses in connection with cars and boats from all parts of Canada direct to Liverpool, London, and other English ports, and this may have some influence on the disposal of the ripening crop.

QUEBEC POMOLOGICAL.

The fourth annual summer meeting of the Quebec Pomological and Fruit Growers' Association was held on August 17 and 18, at Stanstead, with a moderate attendance. The territory represented by the membership of this Society comprises the coldest Apple-growing region of North America. Indeed, it has been only by the most strenuous search after the very hardiest varieties that Apple-growing has been made a success at all. The fact that Apple-growing has at last succeeded in a commercial way, is a remarkable testimony to the patient enterprise of the Quebec horticulturists. The winter of 1896-97 was a very severe one in this region, owing partly to a lack of snow-covering on the soil. Many old orchards of supposedly "iron-clad" varieties were so badly decimated as to require replanting or complete destruction. Such an amount of winter-damage is

however, very exceptional, and fruit-growers be deterred from further planting. The varieties of Apples have been widely distributed throughout the province in answer to the demand for something especially hardy, and such sorts as Transparent and Duchess of Oldenburg have a some commercial importance. The writer has the privilege lately of visiting the old farm of Charles Gibb, at Abbotsford, Quebec. Mr. Gibb is one of the first and most prominent importers of Russian fruits in America, and the orchard he left, and which are now in the hands of J. Craig, are a very interesting memorial of his. Many of the trees which he planted are now profitable crops. The Russian varieties, occupying the cold regions of Canada and the to the exclusion of others of American origin, they have served a very useful purpose in the experimentation in Apple-growing where people have not the faith to try native sorts. Russian Plum trees have met with but indifferent success. Russian Cherries have done a little better, but have not yet passed out of their probationary period. *F. A. Waugh.*

THE SOCIETY OF AMERICAN FLORISTS.

This body has held its thirteenth annual convention at Providence, Rhode Island. It was in respects a notable gathering, especially as to the attendance, but the topics for discussion presented in a very ordinary way, and actual discussion fell flat. Even the proposed change in title to "Society of American Florists and Ornamental Horticulturists," was handled in a desultory way. Mr. A. Herrington made a strong plea for the title of gardener, but the grotesque name submitted was eventually adopted. Now it is an established fact, everyone is asking what is an ornamental horticulturist? and the ludicrous side is being appreciated.

The fact is, the addition is made because the Society seeks a national charter, which was vetoed by President Cleveland on the ground that the interests of horticulture were not to be best served by a body of florists—which, of course, is a fact. Moreover, the Society has been, and is, in need of more funds, which may be supplied by increasing its membership; therefore its managers are open to it up to others than mere commercial florists. The cash of the gardener is sought, and some speakers were not sufficiently careful in expressing themselves in terms of disparagement about florists and vegetable raisers. They should remember at one time they themselves were nearly all way all-round gardeners.

Some time ago there was partly organised in New York a society for gardeners only, for many the craft wanted to maintain their individuality apart from the florists. Since its inception, however, it has been so grossly mismanaged, that the Society of American Florists has now a chance never before had, and it looks as though it will show an even greater vitality than it has at present. The feeling that the Society is to be the working florist was well shown in the election of the new President, W. F. Gude of Washington, D.C. He was sprung upon the meeting in opposition to a wealthy gentleman with large investments in commercial floriculture, and his election was by a large majority.

The next convention will be held in Omaha, Nebraska, and it will be the first time the Society has gone so far into the west. By meeting together with the surprise election of a President—a young man under thirty years of age—looked upon as the dawn of a new era, and scope for the Society's work.

The exhibition held in connection with the convention was chiefly remarkable for the display of Water Lilies and other aquatic plants. The one private collection from Mr. Oakes Ames, trade lot from Mr. H. A. Dreer, to whom they were made in the order named.

Rhododendrons and *Azalea mollis* raised in 1894 were represented by good-sized plants.

the trade is regarding the matter with some interest, as the present import duty on all plants is 30 per cent. *ad valorem*, which makes the foreign stock come dear to the buyer.

THE BULB SUPPLY.

The question of our supply of bulbs has again been introduced by C. H. Allen. It looks as if we shall soon be hard at it raising at home all the *Lilium Harrisii* that are wanted. It will be a serious blow to the Dutch if we take to raising our own bulbs—and why should we not? None can answer that.

POMOLOGICAL SOCIETY.

On September 1 the biennial gathering of that very important body, the American Pomological Society, met at Columbia, Ohio.

THE FRUIT-CROP.

The returns indicate that the Apples this year will be about 60 per cent. of last year's crop; this does not necessarily indicate any diminution in supply for the Liverpool and London markets, but rather that the out-of-the-way districts at home, which were reached last year in sheer desperation, will not be so well supplied.

TOMATOS.

The superiority of English Tomatos for forcing purposes as compared with the American varieties, is being more strongly impressed upon the craft. The one that has proved itself to be *facile princeps* is Best of All (Sutton's), which is fully 50 per cent. better in yield than the hitherto standard variety Lorillard.

POTATOS.

It is noteworthy in the respect that English Potatoes are a failure on the farms of the States. Repeated attempts at their cultivation have been made, but sooner or later—generally in a couple of years or so—the variety has dwindled away, and the "crop" does not equal the seed in weight. This year some better results may be reported, but the dreadfully wet season will account for the present results.

J. JAPANESE IRIS.

A recent visit to the nurseries of John Lewis Childs gave one an entirely new appreciation of the possibilities of the Japanese Iris (*I. Kämpferi*). Here have we been worrying ourselves about the supply of water at the roots when at Floral Park, New York. This plant is grown as a field crop—by the acre! High and dry on the edge of a railroad-cutting were to be seen the very finest blooms. Evidently wet feet are not a necessary condition for this most beautiful member of a gorgeous family.

FRUIT-CONSERVATION.

It is always a matter of surprise to the American housekeeper to learn that her English cousin does not "can." Fruits thus preserved for winter use are much more serviceable for a variety of purposes than jam. Here no housewife fails to put up in glass jars a liberal store of Apples, Pears, Plums, Peaches, Cherries and even Raspberries, Strawberries, &c. These can be used later for dessert or pie, and are almost equal to the fresh fruits. Tomatos are also thus stored. This process of canning is so called, I suppose, because no cans are used. The process broadly is first to get the glass jars well heated by standing them in cold water, which is brought to the boil, then to fill with fruit, cooking it till tender, then adding sugar to the juice that flows from the fruit, so as to make a syrup, then fill the jars quite full, and hermetically seal while still hot. Fruits thus preserved are so infinitely superior to the sickly, over-sugared jam, that the latter is but very rarely met with. The jars for this work are made with a screw metal top, lined with china, and a washer of india-rubber.

Mr. DAVID HOUSTON, Director of the Essex County Technical Instruction, has been visiting many of our eastern experiment stations on behalf of his Council. After inspecting the Government Department of Agriculture at Washington, he will continue his investigations. *An Old Correspondent.*

FORESTRY.

MIXED PLANTATIONS.

(Continued from p. 85.)

IN the formation of a truly ornamental piece of woodland, no better guide can be taken than Nature, and the first question the intending planter should ask himself is, what is the indigenous forest growth of the particular locality he has to deal with. This can easily be ascertained by the inspection of neighbouring woods and copses, or odd corners of ground which have been left to themselves for years, and are gradually becoming stocked with indigenous trees and shrubs. He will probably find a sufficient variety in these spots to enable him to pick out both timber trees and shrubs suitable for game cover; and the chief question to decide is the extent to which these particular species may be employed, keeping in view the particular objects for which the work is undertaken. One almost invariable desideratum in plantations of the usual kind is a quick effect, for the growth of a young plantation into a game cover, let alone its growth into a timber-yielding concern, is a comparatively slow business. Rapidity of growth in a species cannot, therefore, be overlooked altogether, and there is little doubt that, compared with many of our recent introductions, indigenous trees are at a decided disadvantage in this respect. Our native forest flora is also rather weak in evergreens, and here again it does not always satisfy the requirements of the gamekeeper in the way of shelter, or the landscape-gardener in imparting warmth and variety of foliage during the winter months. Conifers are practically the only class of tree at our disposal for this purpose, but their too frequent use either in the park or plantation, frequently nullifies any advantage that sought to accompany their use. All that is required from an æsthetic point of view, in any piece of woodland, is just sufficient alteration in the species and type of wood to prevent the eye from acquiring that familiarity in the scene before it which is said to breed contempt. Any greater change than this is a mistake, as it tends to destroy those peculiar features which are associated with a particular district, and which adapt themselves so readily to the physical features of a locality. It may be difficult to determine definitely the species best adapted for any particular site, but a close observation of the native habitat of both indigenous and exotic forest trees is the best way of avoiding error in this respect. Generally speaking, forest trees may be divided, from an ornamental point of view, into two classes—those which are seen to best advantage on sloping ground, and those which suit themselves more readily to a flat landscape. Amongst the former will be found the majority of Conifers, more especially such as are of a stiff and pyramidal habit of growth, while broad-leaved species are more frequently indigenous to plains and lowlands. This rule of course has many exceptions, for the same species which occupies the hill slopes and elevated ground in a warm climate will be found in the plains and low-lying land at higher latitudes. But in a general way it must be admitted that many Conifers not only thrive better in hilly districts than broad-leaved trees, but also have a far better appearance on a hill-side than the more spreading and flat-topped deciduous types. Of course a fine specimen of any species looks well wherever it may be, but we refer here to trees in woods and large masses, where the general effect is of more importance than that derived from individual trees. Spruce, Larch or Silver Fir, for instance, are more suitable trees for planting on steep hill-sides, or on the sides of deep ravines, than Oak or Beech, not altogether because they thrive better in such situations than the latter, but also because their habit of growth is more in harmony with the rugged and broken nature of the ground. Variety in the landscape in such cases is afforded by the conformation of the ground rather than by the stems and foliage, and that sameness of habit which characterises trees of this class is less noticeable. On flat or merely undulating ground it is otherwise, for here nothing

occurs to attract the attention except the vegetation itself. In such cases, broad-leaved trees usually produce a more satisfactory effect than Conifers, owing to the greater variation in the individual habits of the trees. In deciduous woods, again, we get the varying effects of spring, summer, autumn, and winter, the three former of which undoubtedly possess greater attractions for the ordinary observer than the little varied appearance which Conifers retain throughout the year. Generally speaking, therefore, the choice of species for a mixed plantation should be determined a great deal by the characteristic soil, situation, and physical features of the district. Whatever species thrive naturally in the locality should be planted most extensively, not as a regular mixture, but in masses or groups, in those spots which show them off to best advantage, and where slight differences in the character of the soil render one more likely to succeed than another. Distinct types should only be introduced where changes in the conformation of the ground lend themselves to their use, and where the reason for the change of crop is easily apparent. On flat ground, where no such alteration occurs, the necessary amount of variety may be afforded by placing clumps of another type here and there throughout the bulk in the shape of a mixture with the prevailing species, and in such a way that the change in the class of tree is of a gradual and scarcely perceptible kind, for abrupt changes are seldom natural. *A. C. Forbes.*

(To be continued.)

AN EXTRAORDINARY HYBRID (?) FERN.

Mr. E. J. Lowe has kindly sent me recently a frond and photographs of a presumed cross between *Asplenium trichomanes* and *Athyrium filix-foemina*, and unlikely as such an alliance appears, I am strongly inclined to believe it has taken place, since the bi-pinnate character of the *Athyrium* appears too distinctly, and is so alien to any sports of *A. trichomanes* as to be an extremely unlikely occurrence without foreign influence. I say this, despite my knowledge of the wide variation which undoubtedly occurs without any crossing whatever, because, wide as such variations may be, they are usually simple extensions, so to speak, of previous peculiarities, a plumose form becoming more finely cut, or a crested one more heavily crested. Cresting, *per se*, originates, it is true, in seedlings from non-crested forms, and so constitutes an exception to the rule; but I know of no case where a merely pinnate frond, as in *Asp. trichomanes*, sports into not merely a bi-pinnate one, but in this bi-pinnate form characterised by wide intervals between the pinnules. Thus *Polypodium vulgare* and *Blechnum spicant* both assume bi-pinnate forms, graduating from simple serration to such deeply incised pinnæ as to render them bi-pinnate, but no definite interval is developed, as in the case before us. On the other hand, on examining the frond itself, I find it to be *Asplenium trichomanes* in every respect but form. It is profusely sporiferous, the sori being densely confluent all over it, and the spores are apparently perfect, and display that ovoid shape with an irregular marginal ridge, which distinguishes the spores of this species most unmistakably from the smooth reniform ones of *Athyrium*. Among these I was surprised to find prothalli developed in abundance, germination being clearly visible in seven or eight days after sowing on July 10, and at present a crowd of healthy prothalli are jostling one another for space. I am sanguine, therefore, that a crop of sporplings will result, and yield by their appearance and development some clue to their true parentage. The fact that *Athyrium* is classed with the *Aspleniums* by the best authorities would seem to reduce the improbability of such a cross as this; but apart from a very meagre resemblance in the fructification which has led to such classification, there is absolutely no feature pointing to kinship, and no observant cultivator of varieties

would, except in deference to text-books, accept it as correct. *Athyrium filix-femina* is a large-growing deciduous Fern, of succulent, soft texture; a ground plant, affecting marsh and even boggy situations; is extremely prone to vary—more so, probably, than any other known species, and by virtue of this, has produced a great number of heavily tasselled forms, one even cresting to the fourth degree—i.e. frond, pinna, pinnules, and pinulets; the sorus is almost punctiform, with a ragged, horse-shoe-shaped indusium; and the spore, as we have seen, is smooth, and kidney-shaped. *Asplenium trichomanes*, and most of its allied species, are not deciduous, but evergreen; not succulent and soft, but hard and leathery, and they affect walls, rocks, and comparatively dry habitats. Then, too, they are little given to variation, though *A. trichomanes* is an exception, and even this, like all of its kin, fails to produce regular secondary crests; the sorus is usually long and lineal, and the spore is provided with a marginal ridge of a very pronounced character. In my opinion, therefore, this co-classification is purely arbitrary. With these facts in my mind, coupled with the great fertility of the plant in question, I hesitate until further evidence is provided by the rising generation now under culture to accept the Fern as an indubitable hybrid, though, as I have said, it is difficult to account for the form of the frond on any other hypothesis. In any case, the variation is so remarkable that I have thought a note there anent would be welcome. *Chas. T. Drury, F.L.S.*

VARIORUM.

CRANBERRY-PICKING IN WISCONSIN.—The army of pickers that descends upon the Cranberry-bogs of Wisconsin every autumn, is composed chiefly of Poles, Indians, and half-breeds, the Indians being considered the best pickers because they never strike, and always accept the prices offered by the overseers. As a rule, they earn a dollar a day and their board. They bring their lodges and tepees with them, and camp on the field. The Indians will not begin to work until half-past nine in the forenoon, and they promptly knock off at four in the afternoon, in spite of persuasions or threats. This peculiarity sometimes proves costly to the growers, for if a killing frost is threatened in the night, the owners are compelled to hurry about, and hire more white pickers, since it is a waste of time to try to get an extra hour's work out of an Indian. He would see the whole field frozen stiff first. At such times, the Poles realise the advantage of the situation, and demand extra wages for overwork. The Indians are good weather-prophets, and serve a useful purpose in foretelling when to prepare for frost, and when the word issues from the lodge of a chief that frost is approaching, the bogs are immediately flooded, and extra help is employed. If the water covers all the berries in time, no damage happens, but those that are left exposed will be ruined. *Garden and Forest.*

THE WEEK'S WORK.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Cucumbers.—Where a continuous supply has to be furnished throughout the winter, an early start should be made, and if my previous notes have been followed, the young plants from which the fruits will be obtained should now be making rapid progress. Close attention must be given to tying and stopping, tying the shoots thinly over the trellis, in order to cover it with sturdy bine and healthy foliage whilst the weather is favourable. The fruits for the present should be removed. As soon as the roots emerge through the small mounds on which the plants stand, spread a little new soil, consisting of good loam in a rough state, which has first been made warm, over the surface. Should the house not have been at liberty earlier, plants if strong may yet be planted, and, given favourable weather, they will become well established before the winter sets in. See that the house is quite clean before planting out the Cucum-

bers, otherwise red-spider, mildew, &c., may soon put in an appearance. Should aphids appear, use the XL-All liquid. Old Cucumber plants, if still in bearing, should be treated as I have previously advised, and every means taken to keep them in health till as late a period as possible, and in that way spare the young plants. Keep the points pinched, spent foliage and deformed fruit removed, and the trellis covered with bine, affording nutriment in the form of warm liquid-manure once or twice a week. Do not allow the fruits to attain to their fullest size, but remove them when they are just fit for use.

Melons.—Plants with ripening fruit should be kept quite dry at the roots, and not be syringed overhead; during weather like the present, airing the pit or house freely on fine days, and affording fireheat so as to develop the flavour; taking care however that the sun does not shine directly on to the fruit, or it will turn the flesh of a brown colour. The latest crop must be pushed along speedily by utilising the sun's warmth, which is best done by allowing the heat inside the house to rise to 80° before giving air, and closing early in the afternoon, making use of fireheat on dull days and cold nights, as once a Melon plant is checked the swelling of the fruits is not readily set agoing. Frequently pinch the lateral shoots; afford a light syringing at closing time on days that are fine and sunny, and do not let the temperature at night fall below 70°; and in all other respects follow the directions given above. Always use water that is warmed up to 90°, and do not wet the stems of the plants.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Biford, Dorset.

Deciduous Calanthes.—Plants of *C. Veitchi* and *C. vestita* have commenced to show their flower-spikes from the base of the new bulbs, and it is important that each plant be given additional space. As soon as each batch of the deciduous *Dendrobiums* are removed to their resting-quarters, I fill the space thus vacant with the largest and most forward of the *Calanthes*. Every plant should be placed in a position where it will obtain a certain amount of sunlight. If the plants can be put within a foot of the roof-glass, the extra light will invigorate and solidify the bulbs, and counteract spot in the leaves. If stage accommodation be limited, the smaller plants may be stood singly in shallow pans or baskets, and suspended close up to the roof. During the middle of the day, when the sun is bright, a very thin shade may be necessary. By the end of this month the plants will have become accustomed to the extra light, and the shading may be dispensed with. The bulbs, though considerably advanced, still require plenty of water at the root, and in the extra sunlight the surface of the soil will dry quickly, and will require water accordingly. An alternate watering with weak liquid cow-manure will be beneficial to the plants, if it be discontinued when the plants begin to change colour. *Calanthes* of the *Reginieri* section are now in full growth, and as these would be injured by the extra amount of sunlight, they should be given a separate position, and treated as recommended for the others when they were in full growth.

Cattleya-house.—*Pleione concolor*, *P. lagenaria*, *P. Wallichiana*, *P. maculata*, *P. praeox*, and *P. Reichenbachiana* now require plenty of light and air. It is not necessary to dry-off these Indian *Crocuses* after their bulbs are made up, with the object of inducing them to flower freely; no difficulty being experienced in getting them to produce an abundance of bloom if the compost be kept merely moist until the flowers expand, when dryness at the root is necessary to prevent the flowers from becoming spotted.

Repotting and Surfacing of Odontoglossums.—As with *Masdevallias*, the most suitable time for repotting or top-dressing these plants is the present month, new roots and growths being now in course of development. The outer air is genial in this month, rendering it easy to afford a suitable temperature to the plants, which should be cool and moist, then re-establishment soon takes place. Before the plants are repotted, &c., search the young growths for yellow thrips, which are apt to escape notice owing to their minuteness, till some disfigurement of the leaves occurs. If any signs of this pest are visible in the interior of the growths, every plant should be vapoured once or twice with the XL-All liquid, doing this after sunset, first taking the precaution to moisten the paths, floor, and stages, and to maintain a moderate degree of warmth, which will have the effect of enticing the thrips out of their haunts on to the leaves, where the vapour soonest kills them.

It is always preferable to vaporise the plants before repotting them. Where a considerable collection of species and varieties of *Odontoglossums* is grown, some plants will not have commenced to grow at this date, and others are only just on the move, the repotting of both of which had better wait till further progress is made.

Odontoglossums which may be Repotted, &c.—The species *O. triumphans*, *O. Halli*, *O. Harryanum*, *O. luteo-purpureum*, *O. byatrix*, *O. polyanthum*, *O. tripudians*, *O. cirrhosum*, *O. cuspidatum*, *O. Nevadaense*, *O. naevium*, *O. Pescatorei*, *O. gloriosum*, *O. radiatum*, *O. mulus*, *O. odoratum*, *O. ramosissimum*, *O. Edouardi*, *O. sceptrum*, *O. cristatum*, the numerous forms of *O. crispum*, and the various hybrids of *O. excellens*, *O. Willekeanum*, *O. Andersonianum*, *O. Ruckerianum*, and *O. hebraicum*, which flowered early in the year, may be repotted during this month. A suitable kind of compost for them consists of living sphagnum-moss, good fibry peat in equal proportions, and a moderate number of small clean crocks. Let the sphagnum be well cleaned of leaves and rubbish, and slugs and snails, the last two causing the Orchid cultivator much trouble, as they increase very fast, and commit havoc among the plants. Should the sphagnum contain much water, first squeeze it well, then spread it out in the sun to dry. As regards the peat, it should have the fine dust sifted out of it. To enable the operator to mix the peat and moss intimately, a heap of each should be placed on the bench, and a handful of peat should be taken in one hand, and one of moss in the other, pulling the materials to pieces, so as to well incorporate them. The fresh pots should be quite clean inside and out, and proportionate to the size of the plants, the overpotting of any plant being carefully avoided. The pots should contain crocks to three-fourths of their depth, and above these a thin layer of sphagnum-moss. I may mention that last year I experimented with about twenty plants, and instead of putting in crocks I employed the rhizomes of Ferns which the peat contained, and up to the present time the state of the plants so treated has been satisfactory. Masses of Oak-leaves taken from the leaf-heap and placed edgewise at the bottom of the pot form a satisfactory kind of drainage material. This year many of our *Odontoglossums* will be treated in this manner. When the old compost has become decayed it should be shaken off the roots, but compost in a fairly good condition should only have the surface renewed, the roots being left undisturbed. In potting, the compost should be pressed together with a moderate degree of solidity, but not so much so that water cannot pass away freely. Keep the bottom of the plant somewhat higher than the rim of the pot, and when the filling-in is finished, a few heads of sphagnum-moss may be pricked into the surface. Plants in poor condition should have all of the stale compost removed, decayed roots cut off, and the entire plant be washed in warm water. After repotting them in as small-sized pots as possible, afford water plentifully once, and only just as much as will keep the sphagnum-moss alive; but use the syringe between the pots every morning; and admit plenty of air when the weather is favourable; and every day, just before sunset, close the upper ventilators, and well damp-down. This will cause the roof-glass to be covered with condensed moisture, and set up conditions favourable to the growth of the plants. In the course of the evening, and especially if the outer air is warm and moist, the ventilators that were closed at sunset may be opened to their full extent, and the last thing at night lowered again, but not closed, as much air being allowed to enter the house as is safe.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Droghda, Maidenhead.

Herbaceous Borders.—The rains which have fallen during the past week have moistened the soil thoroughly, but they have spoiled many of the flowers, and rendered much tidying-up necessary. The stakes placed to all annual and perennial Sunflowers will have to be made secure, and *Michaelmas* Daisies, now growing very fast, should be given another tie to prevent their being blown about and made untidy. These plants promise to make a good display; plants of the dwarf and very useful variety, *A. Anellus* bes-arations, being already a sheet of purplish-blue flowers. *Phloxes*—which have been benefited by the rain—should be tied up loosely, if their height be above 3 feet. *Physalis capensis* is one of the brightest dwarf subjects in the borders at the present time, and although not frequently seen in gardens, it is a very desirable plant.

flower-stalks of Lavender should now be cut and laid out to dry in a warm room; while Helichrysms and other everlasting should be cut directly the flowers open, and hung up flowers downwards, in an airy house or shed.

Cuscuta corymbosa.—This half-hardy evergreen plant is admirably adapted for summer-bedding. In gardens where flowering-plants, such as Fuchsias and similar subjects are appreciated in the summer-bedding arrangements, this free-growing, yellow-flowered plant should always be included. It has the merit of continuing in bloom till checked by frost, although not hurt by a few degrees of frost. It may be carefully lifted and potted-up, when it will continue to flower in the greenhouse or conservatory to the end of the year, at which time water should be partially withheld, so as to induce a state of rest, but being an evergreen, it must not be kept very dry, or the leaves will drop off. The flowers are but little affected by damp.

Tuberous-rooted Begonias grow and flower freely in wet weather; and, although seeds form a certain way of increasing the stock of these plants, cuttings are the quickest and most trustworthy method of obtaining plants of any desired tints. These will strike easily now if made from the short side-growths, which are of a harder nature than the strong points, which being very succulent, are liable to decay. Having made the cuttings, place them to the number of four round the sides of a well-drained 64-pot, filled with light sandy soil. If the pots be plunged in a mild hot-bed, roots will form in the course of a few weeks. Pot-off the cuttings as soon as they have plenty of roots, and keep them growing in an intermediate-house throughout the winter and spring. If bushy plants are desired, the points of the shoots should be nipped off in the early stages. Standards are easily formed by taking up one strong shoot, and stopping it at the required height.

THE KITCHEN GARDEN.

By W. POKK, Gardener, Highclere Castle, Newbury.

Vegetable Marrows and Ridge Cucumbers.—Cut the fruits for table use when of small size, and do not allow any to grow large and develop seeds unless a large number of plants exist, as seed-bearing checks the production of fruits. As the nights grow longer and colder, it will be advisable to cover the Ridge Cucumbers with spare lights, and thus prolong the season of fruiting by several weeks. Give abundance of water to both when required, and, occasionally, weak liquid-manure.

Celery.—The main crop of Celery may be earthed up, taking care to pulverise the soil before doing so, and choosing a dry day for doing the work, water being afforded the plants a few hours before beginning to earth up. If the garden be infested with slugs and snails, first afford the trenches a liberal dressing of quicklime. Celery for use in the months of October and November may now be earthed up fully, but later crops not more than half way, more than this causing the decay of the heart-leaves still low down in the plants. It is good practice to go over growing Celery twice or thrice during the season, and tie the leaves loosely together with broad strips of bast or raffa to prevent the leaves being broken by the wind.

Pests are becoming rarer, and every means should be taken to prolong the season by netting the rows so as to preserve the pods from being eaten by small birds. If mice are many, set traps for them, or these creatures will cause much loss.

Mustard and Cress will require a slight protection after this date, and the seeds are best sown in a cold frame or hand-light. When cold weather sets in, sow the seed thinly in shallow boxes, as these can be shifted about as may be desired. Do not cover the seed with soil, but simply make the soil firm, and then sow evenly on the surface, and cover with a board or slate till it sprouts.

Spring-sown Onions.—These will now be ripe, and ready for pulling, about which there should be no delay, or it may be difficult to dry the bulbs, if there are many of them. Given a few fine days, there will be no difficulty in drying them on the ground, if they are turned over daily till dried; but in wet weather it may be advisable to place them on a hard path, or on a bed of coal-ashes to dry. Onions should not be stored in heaps, but laid out thinly in an airy shed for a few weeks, the final sorting and tying into bunches, &c., being left for a wet day at a later date.

If several varieties are grown, let each be kept separate, otherwise the latest keepers may chance to be used first.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Transplanting Strawberries.—Where not already done, no time should be lost in making plantations of Strawberries. The ground for this crop should have received a heavy dressing of decayed manure, and been trenched or deeply dug. In planting, set out the plants in rows at from 20 inches to 2 feet each way, according to the strength of the variety, pressing the soil pretty firmly around the roots of the plants, but keeping the crown slightly above the ground level.

Early forced plants of Laxton's Noble, Garibaldi (syn. Vicomtesse Héricart du Thury), and Royal Sovereign, which had been duly hardened off prior to being transplanted in the open in prepared ground in spring, should have a little more clean straw placed under the clusters of fruit.

Morello Cherries.—If the fruits have been left on the trees for gathering, they should be looked over often, and the decayed fruits removed, so as to prevent decay spreading to the sound ones. The Morello Cherry is liked by some persons as a dessert fruit during the present month for its pleasant acidity; moreover, a dish of large, well-coloured Morellos is not the least of the attractions of the dessert at this time of the year.

Summer-bearing Raspberries.—The canes which have borne fruits should be cut down to the ground, so as to let in sun and air to the current season's canes; and in order to secure them against the wind, twist a length of tarred string once round lines of stoutish sticks firmly stuck into the soil at short intervals on each side of the rows, and tie the two strings loosely together here and there with cross-ties.

Storing Apples and Pears.—The recent gales brought down large quantities of Apples and Pears in orchards. This fallen fruit is only fit for present consumption, and, as such, should be placed apart. In view of more gales occurring, it will be advisable to examine all trees on which fruit is approaching maturity, and gather those which part readily from the shoots, storing them in single layers on the shelves, if plenty of shelving exists, and two or three deep if it be limited. It need scarcely be repeated that all kinds of fruit require very tender handling.

PLANTS UNDER GLASS.

By G. H. MATCOCK, Gardener, Laxton Hoe Park, Luton.

Bougainvilleas.—After this date the plants which have remained where they were planted should be dug up with sufficiently large masses of soil, and repotted in a fairly rich soil, care being taken to preserve intact most of the small roots, and to use clean or new pots, and crock them well with small pieces. After potting, stand the plants in a cold frame or pit for a few weeks, and keep them close until such time as the roots begin to grow again. If flowers are required early, those plants which were kept in pots the whole season will furnish them, the stopping of their shoots being now discontinued. Let the shoots be tied out, and the plants made a trim-looking as is consistent with a graceful appearance, and if green-fly appears on them, fumigate the frames without delay.

Winter-flowering Carnations.—These will not be the better for being left out-of-doors any longer, and more especially if the garden is low-lying. Fasten the flower-stems to neat green-painted sticks, cleaning the plants and the surface of the soil, and washing the pots; placing them afterwards in a well-lighted and ventilated span-roofed house, and near the roof-glass if possible, or, at any rate, in as light a position as possible. Under this kind of treatment the flower-spikes do not become drawn, and the flowers open satisfactorily. No fire-heat will be needed excepting, perhaps, a small amount in the day-time when the weather is dull, wet, or foggy. It benefits the plants to afford liquid manure-water once or twice a week; and occasionally, as a change of diet, a spoonful per pot of patent manure, such as Olay's.

Eucharis.—The leaves of the plant should be cleaned of mealy-bug and Thrips, if these be present, by using a sponge dipped in some kind of insecticide, never allowing them to get badly infested before taking means to rid the plants of these pests. It does the plants good to wash the pots occasionally, in

fact, whenever the leaves of the plants themselves are cleaned. Failing any other means, soft soap at the rate of 4 oz. to the gallon of rain-water, and heated to 100°, will serve the purpose of washing the leaves. Such of the plants as are well rooted, and have matured their foliage, and been rested for a few weeks by lessening the quantity of water at the root, and keeping the plants in a house with a slightly lesser degree of warmth, will, if given more warmth, and a few thorough soakings of water and liquid-manure, soon come into flower. The plants should be started in batches in order to lengthen the flowering season. Some of the plants will be growing strongly in a high temperature, and when growth is completed, these should be rested. We never dry off our plants, and seldom repot them, nor is the habit known in this garden.

Euphorbia jacquiniiflora and pulcherrima.—These plants are now growing strongly, and should be assisted with frequent applications of farmyard manure-water, with chemical manures as a change. The plants should now be placed in a structure provided with the means of heating it, so as to keep up a warmth of 60° and dissipate damp, air being afforded only in fine weather. If the plants do not flag on sunny days, shading should be dispensed with, and this rule applies to all stove and greenhouse plants.

THE APIARY.

By EXPERT.

What Bees accompany a Swarm.—A swarm is composed of the queen, for there will not be another in the hive for eight or nine days, few or many drones, and some thousands of workers. Worker-bees are nurse-bees for the first fortnight of their short lives, and as there will be thousands of grubs left in the hive when the swarm leaves, these bees for feeding purposes alone will be in request. Apart from their services as nurse-bees being required, it is a well-known fact that it is the old bees mainly that accompany or form the swarm. Bees live only about five or six weeks in the summer, and six months if hatched at the end of the season when work is about over. The queen commences to lay in January, when she deposits a few eggs in the centre-comb, and she continues her work throughout the year until July or August. During the summer months she lays between two and three thousand eggs a day.

A Mammoth Bee-hive.—The biggest bee-hive in the world is a natural one in Kentucky, known as the "Mammoth Bee-hive." It is in reality a huge cave, the main compartment of which is 150 feet high, the floor covering 10 acres in extent. The bee-hive is of solid rock, the roof having been entirely honey-combed by bees. M. Bertrand, a famous French bee-keeper, has hives containing twenty-six frames.

Shallow Frames for Extracting.—There seems to be a general inclination just now, on the part of those who keep bees more or less for profit, to favour a system of working for extracted honey in preference to that where the produce is intended to be sold in the comb. A good many reasons have contributed to bring about this feeling, but no doubt the low price obtainable for fine comb-honey, and the difficulty of finding a market for it last season, have been the main causes of complaint. Sections (if they are to be secured in fine condition and quality) are not easily got, for a good deal of care and trouble are involved in their production; and when the bee-keeper, after all his expenditure of time and labour, is offered perhaps less than one half the price he counted on, he is apt to feel discouraged, and inclined to cast about for a remedy for what is to him a very unsatisfactory state of things. We have been brought into communication in various ways with a goodly number of bee-keepers, and there seems to be but one opinion as to the way in which an improvement can be effected. In other words, they are "going in for extracting," either wholly, or as nearly so as to make comb honey a very minor point with them. This being so, it behoves us to follow the bent of public opinion; and although it may be thought early in the season to give advice now, we deem it useful to say a few words to those who are already maturing their plans for another year. The main point for consideration being the very perceptible fall in the value of British honey experienced in the autumn of 1885, it becomes necessary to consider by what means the largest amount of the product may be obtained at the smallest outlay of time and money, in order to secure such an equivalent in quantity as will counterbalance lower price.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	SEPT. 13	Bulbs at Protheroe & Morris' Rooms.
		Twelfth Annual Trade Sale of Plants at Dyson's Lane Nurseries, Upper Edmonton, by Protheroe & Morris.
		Sale of Freehold Building Land at Rayleigh, Essex, by Protheroe & Morris.
TUESDAY,	SEPT. 14	Bulbs, at Stevens' Rooms.
		Bulbs at Protheroe & Morris' Rooms.
		Annual Sale of Heaths, at the Nurseries, Lee, Kent, by order of Messrs. B. Maller & Sons, by Protheroe & Morris.
WEDNESDAY,	SEPT. 15	Bulbs, at Stevens' Rooms.
		Bulbs at Protheroe & Morris' Rooms.
		Annual Sale of Plants at The Nurseries, S. Woodford, by order of Mr. John Fraser, by Protheroe & Morris.
THURSDAY,	SEPT. 16	Sale of land at Wanborough, near Guildford, also the Lease of the Ashford Nursery, at the Auction Mart, Tokenhouse Yard, by Protheroe & Morris.
		Bulbs, at Stevens' Rooms.
		Bulbs at Protheroe & Morris' Rooms.
FRIDAY,	SEPT. 17	Twenty-ninth Annual Trade Sale of Plants at the Brimsdown Nurseries, Enfield Highway, by Protheroe & Morris.
		Bulbs, at Stevens' Rooms.
		Bulbs and Orchids at Protheroe & Morris' Rooms.
		Sixteenth Annual Sale of Heaths at the Longlands Nursery, Rickup, by Protheroe & Morris.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—57.8°.

ACTUAL TEMPERATURES:—

LONDON.—September 8: Max., 61°; Min., 52°.

PROVINCES.—September 8: Max., 60°; Min., 51°.

Influence of Stock on Scion. THE influence of the stock upon the graft is a subject which has been much debated, but it has long been observed that fruit-trees, and especially many varieties of dessert Pears, are modified in their characters, according to the nature of the stock on which they are grafted. It has been remarked, in fact, that if the essential peculiarities of these varieties have not been changed, their vigour and early fruit-bearing, as well as the size, colour, and flavour of their fruits were noticeably modified, according to whether they were grafted upon the free stock or on the Quince.

But hitherto, although these observations relate to one of the most important questions in vegetable physiology, they have not been made the object of scientific tabulation, which would have furnished the indispensable precision and exactitude. Some few years since some experiments were made by a French observer, whose name we have unfortunately mislaid, but which are of the greatest importance in connection with this subject.

As it was necessary to proceed under exactly identical conditions, ripe fruits of *Triomphe de Jodoigne*, which were gathered from two trees, one grafted on the free stock, and the other on the Quince, were submitted to analysis during three consecutive years.

It is almost needless to add that the two Pears were of the same age (fifteen years); their vegetation had always been normal; they were trained in the same manner, and were planted side by side; consequently, their roots were in the same soil.

Neither to the composition of the soil, age of the trees, nor exposure, which frequently have so much influence on the size and flavour of fruits, can be attributed any of the results under such circumstances as these.

From reading this table, which chronicles the result of analyses made during 1894, '95,

and '96, it may easily be deduced:—1st. That the average weight of fruits gathered on the *Triomphe de Jodoigne* grafted on the Quince far exceeds that of the fruits of the same variety grafted on the free stock; 2nd. That the density of the juice of these same fruits is higher in the former than in the latter case; 3rd. That the proportion of free acid (represented by sulphuric acid, SO_3HO) is greater in the juice expressed from fruits gathered on the variety under consideration, and grafted on the Quince, than in the juice of the fruits of the same variety grafted on the free stock. 4th. Finally, and this is the most important fact and one it is especially desirable to establish, the total quantity of sugar contained in the juice of fruits gathered from *Triomphe de Jodoigne* grafted on the Quince is markedly higher than that in the juice of fruits from the same variety when grown on the free stock; in fact, there is observable an excess of nearly 9 grains of sugar per litre in plants grafted on the Quince. Then, for trees producing annually each about 300 fruits, there would be from 280 to 406 grammes of sugar according to the stock, the total quantity of sugar attained being 7 kilos. with the *Triomphe de Jodoigne*



FIG. 55.—

A, *Calceolaria arachnoidea*; colour purple. Natural size.
B, The *Calceolaria* of sixty years ago.

on the free stock, while it exceeded 11 kilos. with the same variety grafted on the Quince.

From the whole of these experiments it is proved that the stock exercises a considerable influence upon the graft, since it increases or weakens most of the physiological phenomena of the scion.

We came upon the substance of this note by accident, and unfortunately we have no record either of the name of the observer, nor of the place of publication; but the subject is too important to be passed over.

CALCEOLARIAS, 1835 TO 1897.—The generic name of this beautiful flowering plant has its origin from the word *calceolus*, a little slipper, in allusion to the form of the flower; it was so named by LINNÆUS. The species *C. pinnata* was introduced into this country from Peru by Sir JOSEPH BANKS in 1773. The herbaceous variety as we know it to-day is the outcome of a lengthened series of hybridising and cross-fertilisation. In 1820 only seven species were known in this country, the handsomest of which was *C. corymbosa*, the flowers of which are yellow, and the form of the flower that of a sack-purse. From that time till 1830 several other species were introduced from Chili, two of which had purple flowers. As soon as these plants bloomed in the nursery of Messrs. YOUNG, of Epsom, their foreman, Mr. PENNY, made an attempt to hybridise them, and the result was a number of beautiful varieties. In 1831 the first spotted variety was introduced into this country. It was found easy to cross the true sub-shrubby species with the herbaceous, and these remarkable productions incited many persons to raise

varieties between them. Amongst the first to raise *H. Calceolarias* were J. PLANT, a florist, of Chaddle MAJOR of Knostrop, near Leeds; BARNES, gardener to W. NORMAN, Esq., Bromley Hill; GREEN, gardener to Sir E. ANTROBUS, Cheam; whilst a few years later came KINGHORN, gardener to the Earl of KILMOREY; W. H. HOLMES of Derby, Messrs. DICKSONS of Edinburgh, and N. GAINES of Bittersea. Of these raisers, it was H. MAJOR who was the first to make any notable advancement in the *Calceolaria* as a show flower, and it is to his endeavours that we are indebted for the foundation of the fine strains of to-day. At the present moment there are several prominent gardeners who have select strains of this plant, and our leading seedsmen are also continually improving the size and form of the blossoms and the habit of growth; and we may mention Messrs. CARTER, Messrs. SUTTON, and Mr. JAMES, as possessors of some remarkably fine strains. Our small illustrations represent *C. arachnoidea*, fig. A. and an improved type of the *Calceolaria* of 1835, fig. B. and the large one p. 183 that of Messrs. CARTER's Victoria strain taken this season, which they have kindly allowed us to reproduce. The public taste at one time leaned towards the sub-shrubby varieties; but the taste in this direction has greatly declined, and now the herbaceous varieties are generally cultivated. The former were decidedly miffy plants, difficult to keep over the winter, and liable at other seasons to die suddenly without apparent cause. A coloured plate of eighteen varieties of *Calceolarias* is given in the *Floricultural Cabinet* for October, 1835, p. 238, which show the first improvements obtained by the florist, J. PLANT.

"THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—The August number, forming part I. of volume xxi., is now before us. It appears, on reference to the table of contents, to be stored with interesting matter, of which we may instance "Microscopic Gardening," "Bud Transference and its Effects on Fruit," "Artificial Manures and their Bearing upon Horticultural Practice," "Winter and Spring Bedding in Flower Gardens," "Diseases of Plants," "The Physiology of Pitcher Plants," and "Storing and Preserving of Fruit," these being the titles of papers read at the various meetings of the committees held at the Drill Hall, James Street, Westminster, during the present year, outlines of which have appeared in these pages. We find a number of reports of trials carried out in the Society's garden on Beans, Peas, Strawberries, and a list of the proposed trials to be undertaken during the ensuing year.

A JUBILEE EXHIBITION IN VIENNA.—The Imperial and Royal Horticultural Society of Vienna intends to hold a jubilee exhibition next year in commemoration of the EMPEROR FRANZ JOSEPH's fifty years' reign. This exhibition will remain open during the spring and summer, and will include also four special exhibitions of short duration. Demands for space must be made previous to November 1 of the present year.

BULLETIN OF THE ESSEX TECHNICAL LABORATORIES, CHELMSFORD.—The summer course of three weeks' elementary instruction in the science and practice of horticulture of the County School of Horticulture was held during July, and a class of fourteen pupils attended it. A theoretical and practical examination in both branches of the subject took place during the last week of the term. The examination-papers consisted of questions in the science of horticulture, to be answered by the student orally in some cases, and in writing in others; in the practice of horticulture, and in horticultural operations.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of this Society on August 14 last, the Floral Committee awarded First-class Certificates as follows, viz.:—To Mr. C. G. van Tubergen, jun., of Haarlem, for Cactus Dahlias, Bridesmaid, Cycle, Fantasy, and Starfish; to Messrs. E. H. Krelage & Son, of Haarlem, for *Gladiolus gandavensis* Weissé Dame, G. Lemoinei Henriette Renan, G. nanceianus Colonel Gillon, and

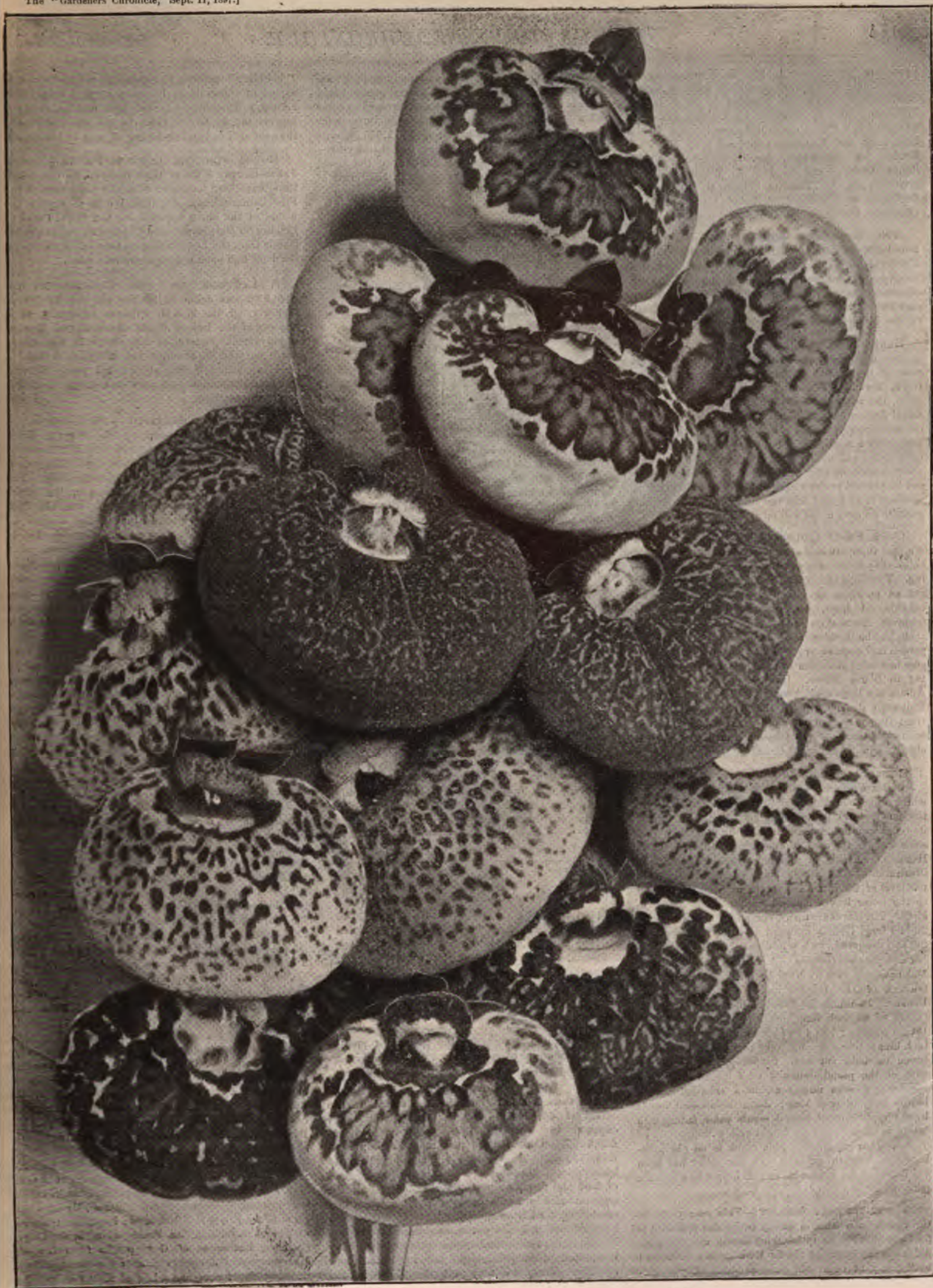


Fig. 56.—MODERN TYPES OF CALCEOLARIA HERBACEA BLOOMS. (SEE P. 182.)

Aggdonium japonicum; to Mr. K. Wezelenburg, of Hazerswoude, for *Glyceria spectabilis* foliis variegatis. Certificates of Merit were awarded to Mr. C. G. van Tolbergen, jun., of Haarlem, for *Canna* × *Ami Jules* *Christen*, C. × Vice President Luizet, *Cactus Dahlia* *Cinderella*, and *Kniphofia* × *Surprise*; to Mr. Phil. Benkel, of Hilversum, for *Heliotrope* *Madame Renée André*; and to Mr. K. Wezelenburg, of Hazerswoude, for *Tamarix Odessana*. A Botanical Certificate went to Mr. J. H. Schober, of Putten, for *(Enothera tetrapetala)*. H. C. Zwart, Secretary.

THE SPINELESS GOOSEBERRY.—We find a note by M. Professor EMIL RODIGAS in the *Bulletin d'Arboriculture*, to the effect that plants of this variety sent out by LETELLIER & SON, Caen, had reverted to the original spiny form. This reversion may be due to the goodness of the soil of the horticultural school-garden at Ghent.

BERBERIS VULGARIS AND MILDEW.—In consequence of the common Barberry serving as the host plant of the mildew of corn, *Puccinia graminis*, the Royal Swedish Agricultural Academy in Stockholm, the managers of the Royal domains, and the Royal Agricultural Associations, have requested the railway directors in Sweden to grub up all Barberry-bushes for a minimum distance of 50 metres from all cornfields; and nurserymen are directed to notify in their catalogues that this species of *Berberis* should not be planted in the vicinity of arable land. In this manner it is hoped that the spread of this injurious parasite on corn crops will be greatly lessened.

CAPE FRUIT CULTIVATORS.—I am sorry to see that there are still some farmers at the Cape who think they know all—or enough—about fruit growing. The Cape Government expert recently failed to get an audience at King, outside the Press and officials. I hope, however, his suggested Fruit Growers' Association will catch on. There is still room in the London markets for well-packed Cape garden and orchard produce. Mr. RHODES intends to give increased attention to this matter of fruit-growing in South Africa. He has just received from Australia a large consignment of Citron trees for the Bulawayo district, where they should do well. I trust they may, and that other experiments in the acclimatisation of vegetable life in Rhodesia will also succeed. *The African Critic*.

BOTANICAL MAGAZINE:—

Scheelea Kewensis.—A tropical American species, of which a figure of the crown, together with details of the flowers and fruits are given, the plant having flowered and borne fruit at Kew—a matter of rare occurrence in the case of the larger Palms, as Sir J. HOOKER remarks, in his note accompanying the illustration. The whole plant is 25 feet high to the level of the coma, and the trunk from the ground to the lower leaves measures 8 feet, and 3 feet in girth. The leaves are many, spreading, and decurved, 25 feet long, leaflets crowded in three ranks, spreading and decurved, with pendulous tips.

Cirrhopetalum Curtisii.—A native of the Straits of Malacca, and sent to Kew by Mr. CURTIS, Superintendent of the Garden and Forest Department, Penang. Pseudo-bulbs about an inch apart, and two-thirds of an inch long, ovoid, green, clothed with brown sheaths; leaf 4 to 4½ inches long by nearly an inch broad, linear oblong, very coriaceous, yellowish-green on both surfaces. Scapes solitary from the base of the pseudo-bulbs, 3 to 4 inches long, very slender; flowers numerous, in a crowded umbel, hardly half an inch long; dorsal sepals and petals bright rose-coloured, lateral sepals paler, fading into white in the middle; lip bright yellow.

Helianthus giganteus.—This plant is an old inhabitant of English gardens. *H. giganteus* has been cultivated at Kew since its establishment as a botanic garden.

STOCK-TAKING: AUGUST.—This operation, in the present condition of things social and political, is far from proving so satisfactory as one might desire. Affairs in the near and the far East are in a dislocated condition; at home the ruinous game of "beggars-

my-neighbour" is being busily carried on in several most important trades; and as a natural consequence, trade is deeply affected, as the export record to some extent proves. The total value of the imports for the past month are placed at £33,371,385, against £32,480,473 for the corresponding period last year—or an increase of £890,912. Here is the usual extract from the "summary table" in the Board of Trade Returns for August:—

IMPORTS.	1896.	1897.	Difference.
Total value ...	£ 32,480,473	£ 33,371,385	+ 890,912
(A.) Articles of food and drink—duty free ...	11,087,257	11,718,883	+ 631,626
(B.) Articles of food and drink—dutiable	1,920,668	1,940,789	+ 20,121
Raw materials for textile manufactures ...	2,465,714	2,247,764	— 217,950
Raw materials for sundry industries and manufactures	5,036,984	5,635,240	+ 598,256
(A.) Miscellaneous articles ...	1,013,188	859,078	— 154,110
(B.) Parcel Post ..	54,774	82,551	+ 27,777

Imports of duty-free supplies of food and drink show an increase of £631,626, which is spread over a large area; but cereals do not cut a very satisfactory figure. For instance, there is a decrease of £311,252 in Wheat; of £94,162 in Barley; and of £44,326 in Oats—quantities, in all cases, showing a corresponding reduction. The sensational prices in the American market gave a fillip to prices in the home market—one result being a rise in the price of bread—what the ultimate effect may be has, we think, yet to be seen. The unexpected enhancement of values in the Chicago and New York corn markets might not have occurred had the monthly crop reports been carefully noted, and it would be well for our Board of Agriculture to see to this matter. A brief monthly notice of crop-prospects at home and abroad—that is, for a month or two preceding harvest-time—would certainly be beneficial all round; and a correspondent, who invited the attention of the Board to the subject has, he writes, been promised that the matter shall have consideration. There is plenty of time. One unsatisfactory item in the imports is that of £177,018 set down for increase in the value of manufactured articles. The "decrease" items are metals, chemicals, oils, raw materials for textile manufactures, and "miscellaneous." Our ever-interesting statistics of fruit imports is appended:—

IMPORTS.	1896.	1897.	Difference.
Fruits, raw:—			
Apples ... ..bush.	208,335	182,747	— 25,588
Cherries "	5,675	5,577	— 98
Plums "	310,841	471,073	+ 160,232
Pears "	215,392	450,616	+ 235,224
Grapes "	251,361	193,653	— 57,708
Unenumerated "	332,452	344,533	+ 12,081
Onions "	497,846	639,027	+ 141,181
Potatoes cwt.	51,093	68,764	+ 17,671
Vegetables, raw, unenumerated value	£127,931	£186,375	+ £58,444

By-the-way, the imports for the past eight months show an increase of some £11,438,513 over the corresponding period last year. Turning now to our

EXPORTS.

we find there is a falling off for the month to the extent of £1,552,799—that is to say, whilst the exports in August, 1896, were valued at £20,326,796, those for the past month amounted to £18,773,997. The reasons for this have already been noticed. The falling off is principally in articles of food and drink, yarns and textile fabrics, metals, and articles manufactured therefrom excepting machinery, millworks, apparel, and articles of personal use, and also partly-manufactured articles. We can only express the hope here that changes may be effected in the political and social conditions now existing. True, we may not be alone in the

"hobbling" process, but a steady look at the £ & d aspect of things is to be recommended to all concerned. The drop on the eight months' trade is represented by £3,145,774. In the four months of the year still to run this falling off may be recovered.

BULBS FOR THE LONDON PARKS.—Messrs. JAMES CARTER & Co. of High Holborn, for the ninth time, have been honoured with the commands of the First Commissioner of Public Works to supply the whole of the bulbs required for the Royal Parks of London for the present season's planting; and a similar favour from the London County Council for the parks, Gardens, and open spaces under its control.

A LECTURE ON THE CULTIVATION OF VIOLETS was delivered on the 4th inst. by Mr. J. MERRITT, gr. to H.R.H. Princess BEATRICE, at a meeting of the Isle of Wight Horticultural Mutual Improvement Society, at Newport. It was afterwards resolved to abandon the intention to hold a fruit exhibition during the present year. Several Cultural Commendations were awarded to exhibits before the meeting.

PUBLICATIONS RECEIVED.—*Fruit Growing*, a useful shilling handbook, by B. WELLS, Fruit Nurseries, Crawley.—*The Canadian Horticultural* (Ontario), August.—*Report on the Government Gardens and Parks, Nilgiris* (Madras), July. The Curator, Mr. R. L. PROUDLOCK, gives us the information that "the year under review was the first in which the gardens were under the control of the collector of the district instead of under that of the Government botanist. The appointment of a Government botanist is still under correspondence between the Government of India and the Secretary of State. Pending final orders the work has been entrusted to Dr. A. G. BOURNE, the officiating Superintendent of the Central Museum, who will deal with all applications for botanical assistance. In consequence of this arrangement, and the decision to ultimately make Madras the head-quarters of botanical work in this Presidency, the Herbarium and the more valuable portion of the Library hitherto attached to the Government Gardens at Ootacamund have been transferred to Madras." Much necessary work has also been done in the Ootacamund gardens during the past twelve months; and now the garden buildings need enlarging. Mr. PROUDLOCK reports the unusual fact that a "garden which has been in existence for fifty years, and which has nearly three miles of boundary line, is almost entirely unfenced."

—*Agricultural Bulletin of the Malay Peninsula* (Garden and Forest Departments, Straits Settlements), June, includes notes on Rubber-culture, *Ramie* (*Boehmeria nivea*), Sugar, Coffee-pests, Birds useful to the Agriculturist, and Pot-plants.—*Agricultural Gazette of New South Wales* (May) contains much information, including articles on Marketing Citrus Fruit, the Strawberry, Phylloxera, Influence of Bees on Crops, &c.—*Anniversary Address*, by J. H. MAJORS (Royal Society of New South Wales, Sydney) May. The subject of the address is divided into three headings: 1, History of the Society during the past Year; 2, Progress of Science in New South Wales during the past Year; and some Botanical Notes and Jottings.—*The American Florist*, August 7 and 14, a "Convention Number" of special interest as regards both letterpress and illustrations.—*Annual Report of Hawkesbury Agricultural College and Experimental Farm*, Richmond, New South Wales, for 1895.—*Revue Scientifique*, August 21, includes a paper by M. E. PRILLEAUX, on "Maladies des Plantes Agricoles et des Arbres Fruitières et Forestières causées par les Parasites Végétaux."—*Botanische Zeitung*, August 16, and Heft VIII. (also August 16), including "Kenntnis der Polyembryonie von *Allium odoratum*," F. HEGELMAIER.—*The Kew Bulletin* for the months of April, May, June, and July. These numbers contain much very interesting matter, as, for instance, Mycological Flora of the Royal Gardens, Kew; Insects destructive to Plants in West Africa, Fruit-growing at the Cape, Canaigre, Extraction of Gutta-percha from Leaves, Murrum-grass, Eucalyptus Timber for Street-paving, Grafting Sugar-cane, and a List of Kew Publications.

841-95 (Eyre & Spottiswoode).—*Bulletin de la Société Botanique de France* for August.—*Bibliothèque des Sciences Naturelles* (J. B. BAILLIÈRE ET 9, Rue Hauteville, Paris).—*Florilegium Har-* (DE ERVEN LOOSJIS, Haarlem).—*Useful* (Printing Office).—*Annual Report of the Forest* (Madras Presidency, for the year ending 30, 1896 (Government Press, Madras).—*Nouvelles Recherches sur les Nodosités ou Tubercules des* (by C. NAUDIN (Librairie Agricole de son Rustique, 26, Rue Jacob, Paris).—*Journal* (my for September, 1897.—*Botanical Magazine*, (Fruit Culture for Profit, Salisbury series.—*Book of the Department of Agriculture* (Wash-Government Printing Office).

There may be some fifty of these trees from five to six years planted, and although fruiting sparsely hitherto, they this year carry a splendid crop. The trees are somewhat loose growing, and possess the habit of fruiting at the points of the shoots. The fruits are of good size, some quite large, roundish, tending to yellow in colour, with bright red next the sun. I am certain, that could growers of Apples generally see these Ruxley trees now, there would be 10,000 planted this autumn. In every case the trees are assisted to carry the fruit by the aid of props.

Cordon Pears.—One side, and the bald gable end of a large brick building close to Mr. Miller's house, have been utilised by planting cordon Pears. These were planted several years since, and stand

brick floor, 2½ feet below the surface, presumably laid by the monks of old, and on this wall are grown fine young trees that are utilised as needed to fill any vacancies that may occur in the houses. In the home garden a similar high south wall is finely filled from top to bottom, and in every part with good growth, foliage, and fruit of Barrington, Royal George, and Bellegarde Peaches, and Pitmasoa Orange, Veitch's Large Elruge, an I Violet Hative Nectarines, the whole presenting a first-rate example of such hardy fruit-culture.

Melons.—A good many years ago when at Clumber, Mr. Miller raised so good a green-flesh Melon, that he named it after his friend of Welbeck, William Tillery. That variety in an improved form, for the fruits are now more handsomely netted as well as of better shape, is the one chiefly grown at Ruxley, and a first rate variety it is. As a green-flesh form (and the greens usually give good flavour), this is one of the best. William Tillery, like its compeers, Hero of Lockinge and Blenheim Orange, will be a still good class when many successors have been forgotten. A. D.



FIG. 57.—FICUS RADICANS VARIEGATA.

FICUS RADICANS VARIEGATA.

WE represent by fig. 57 a shoot taken from a plant shown by Mr. W. Bull, New and Rare Plant Establishment, King's Road, Chelsea, at a meeting of the Royal Horticultural Society, on the 24th ult., when it was recommended a First class Certificate. The whole of the eight plants noticed on that occasion were freely variegated, the margins of the leaf in all cases being the parts where the variegation commenced. Some of the leaves were almost white. The usefulness of this variegated form, which creates so striking an effect intermixed with other foliage, will be apparent. Judging from the appearance of the plants when exhibited, this variety would appear to be of moderate and slender growth.

KEW NOTES.

A LARGE-FRUITED CACTUS.—The largest fruit we have ever seen produced by any Cactus has lately ripened on an old specimen plant of *Cereus triangularis*, which for many years has been a conspicuous object on the roof of the Cactus house at Kew. The present year has seen this plant at its best, for it has borne over 150 flowers, 30 of them having been open at one time. The flowers are nearly one foot across, the sepals green or yellow, the petals pure white, forming an enormous star with a large cup-like centre, containing a sheaf of slender filaments tipped with yellow anthers. The Kew plant has flowered more or less freely every year, but it has never borne fruit until this year, when, with the hope of getting a good hybrid, pollen of *C. grandiflorus* was placed on the stigma of a single flower of *C. triangularis*. The stamens of the latter had not been removed, and therefore the cross is not certain; but, looking at the fact that the flower thus treated was the only one that set a fruit, it is probable that the cross has been effected. The fruit matured in about three months, and when ripe it weighed exactly 2 lbs., its size and shape being those of an ostrich's egg, and its colour bright crimson. The rind was an eighth of an inch in thickness, and it was filled with soft, white pulp, through which the small black shining seeds were scattered. This pulp was decidedly palatable, being sweet, very slightly acid, whilst the seeds were in no way disagreeable. It is probable that with a little management a large crop of fruit might be borne annually by strong plants of this species of Cactus; and as it is easily grown, it is worth trying—in warm countries, at any rate. In my opinion it is far superior to the fruits of any *Opuntia* that I have tasted; moreover, its beautiful colour and size would recommend it as a good fruit for the tables of the wealthy. Philip Miller speaks of it as "the best flavoured of any of the sorts," and states that it was cultivated in Martinique for its fruits before 1759. W. W.

ES FROM RUXLEY LODGE.

his returns of the fruit crops in the Claygate of Surrey, Mr. J. Miller places Apples as "average." Judged, however, by the general of the season, his crop at Ruxley Lodge is erably above, yet as compared with what it be for the exceeding breadth of the orchards it is small. Whilst there may be seen, on rather old trees, capital crops of Keswick Max Coddins, Lord Suffield, Lord Derby, aim Oange, King and Collini Pippins, and few others, there are very few fruits on trees, with one notable exception, and that is arkable a one as to call for special notice. In lying orchard on grass, on a very stiff clay soil, s at intervals amongst other varieties, are many andards of Yorkshire Beauty, as named there, gh I think the variety has other synonyms.

some 15 inches apart. Poor Pear season as this is, yet there is on these cordons generally quite a good sprinkling of fruit, and some of the best dessert varieties are really fruiting well, but others, not so fruiting, carried good crops last year. Mr. Miller, I observed, did not adopt the usual practice of training his trees obliquely but vertically; and the trees seem to fruit just as well, and are admirably furnished. Thus there is no rule without the exception. The cordons ranged from 16 to 20 feet in height. It is a capital example of how efficiently to utilise good wall aspects by planting them with Pear-trees.

Peaches, &c.—Although these fruits and Nectarines are grown in great quantities under glass, they are not the less remarkably well grown on walls out of doors, the Scotch love of wall training asserting itself. There is a south wall in the old monastic garden, in the bottom of the border of which, is still left the

HOME CORRESPONDENCE.

JUDGING AT HORTICULTURAL EXHIBITIONS.—

Allow me a small space in your columns to ventilate my ideas in regard to the judging of exhibits, a matter that frequently affords subject for debate in the horticultural press. In the more important horticultural societies, great consideration is given to the selection of the judges, and these men almost invariably perform their duties to the best of their ability in accordance with the views that they entertain in regard to the merits, and condition of the exhibits. These views, however, often conflict with those of the exhibitors and visitors. In reviewing the results of awards made at agricultural shows, we frequently observe the decision given by the judges at one place completely reversed a few days later at another show without any apparent change taking place in the condition of the animals. This irregularity is looked upon by our agricultural brethren as a matter of course consequent upon the change of judges, and there is nothing said about it. In the same way, two sets of judges adjudicating upon a class of horticultural exhibits would sometimes arrive at different results. This, however, should not be; and the chances of eccentric judgment would be rendered almost impossible if the methods of estimating the values of various points were uniform. The dissatisfaction experienced in Grape judging last year, and the subsequent discussion in these pages with little prospect of a better understanding being arrived at in future, will suffice for my offering a few suggestions that may enable us to see eye to eye as regards the value of varieties in competition. We have little guidance in this matter from the code issued by the Royal Horticultural Society in regard to fruit. The relative value of the properties in single specimens of flowers and vegetables are, however, exhaustively treated, although no direct attempt has been made to deal in the same manner with genus, species, and variety. Neither, as was expected, has a systematic method of judging, especially collections, been formulated for universal adoption by societies. Then what is to be done? The only data we have on this important subject appeared in these columns a few years ago, and is now embodied in the *Horticultural Handbook* (Blackwood & Sons). The method therein propounded seems adequate for the purpose of adjudication, and the estimate given on the knotty point of relative value in the various classes of exhibits is as near as possible founded on an equitable and popular basis. In the second edition of the publication referred to—which, by the way, has the imprimatur of Malcolm Dunn, the recognised leader of gardening thought and practice in Scotland at the present time—there is a list of Grapes classified in the order in which they are esteemed, with an estimate of their value proportionate to the usefulness of the variety for dessert, combined with its exhibition qualities. The varieties are divided into three classes, those with Muscat flavour and large berries being at the top of the list, with Black Hamburg, Mrs. Pearson, Madresfield Court, and Duke of Buccleuch, following. These are followed by such varieties as Buckland Sweetwater, Gros Colman, Foster's Seedling, Lady Downs, while a shade farther down the scale are found Alnwick Seedling, Trebbiano, Gros Maroc, Raisin de Calabre, &c. It is clear to all, that there is a wide disparity in the natural merits of the varieties named, which should be followed with a corresponding depreciation in the rate of value in competition. In fixing a rate of maximum value for the varieties with both flavour and appearance, due regard should be paid to the standard prescribed for measuring the cultural merits, so that one factor may not neutralise a proper and equitable estimate of the other. Allowing five points as maximum for cultural merit, and one for relative value, seems a fair proportion to strike between the two elements. In the latter case, fractions of a third, a half, and quarter, would require to be used, or decimals may be employed as in the list and tables already referred to. The metric system of calculation when minute degrees of difference exist is eminently satisfactory, being simple, and capable of extension to the 100th part or lower. I heartily agree with the system promulgated in the publication from which I have been quoting, especially in dealing with cultural and relative value separately, and if this method, or a better one, if possible, were adopted by judges generally, we might claim to have inaugurated during the Queen's reign, although at the eleventh hour, a just and intelligible system of judging at exhibitions, which we do not at present possess. I intended to have

made a few remarks on exhibiting unripe against ripe Grapes, with a few observations on mixed collections, but as I have exceeded the limit of an ordinary letter, I will do so in a future issue. *Avonshire Lad*.

STATICES.—A genus of plants, inhabitants of saline districts and the seashore, mostly of Western Asia, deserve to be more generally cultivated in our gardens than is the case at the present time, being of easy culture, of compact, dwarf habit, and very free-flowering and enduring, some of the species lasting in bloom for a long time, notably, *S. profusa*; indeed, the variety might be termed perpetual-flowering, as when a good number of plants are grown, it is possible to have quantities of bloom the whole year. The colour, too, of this species is pleasing, and one that we do not often get in flowers, the calyx being purple, and the corolla white. In my opinion, the best for general purposes are *S. brassicifolia*, *S. imbricata*, a native of Teneriffe; *S. Gilberti*, and *S. Butcheri*. These resemble each other closely, and being of stronger growth than *S. profusa*, make large specimens suitable for exhibition. The compost which suits these plants is one that consists of good fibry loam three-fifths, one fifth leaf-soil, and one fifth decayed oxen-dung in a dry state, silver-sand being liberally added to the mixture. The plants should be grown in a temperature of 50° to 65°, a close atmosphere being avoided during the flowering-time. The flowers, which are "everlasting," are invaluable when cut for house-decoration during the winter. The above kinds may be increased by cuttings inserted in small pots, covered with a layer of sand during early spring, and placed under a bell glass in an intermediate temperature. All greenhouse species, contrariwise to the ordinary practice with other plants, should not be rested during the winter, but be kept gently growing all the time. *H. T. M., Stoneleigh*.

BLACKBERRIES.—Referring to "A. D.'s" note in your issue for August 28, I have grown *Rubus laciniatus* on a heavy, almost clayey, dry soil, somewhat stony. The brambles are planted on a bank 2½ feet high, and are 5 feet apart, covering an arch of wire-trellis 12 feet over and 80 feet long, running east to west. The stout rods are fruiting very heavily this summer, and the berries are exceedingly large. I commenced to gather ripe fruits on Aug. 2, and during the following week I gathered 40 lb. for preserving-purposes. Like "A. D.," I am strongly of opinion that were our market-growers to cultivate this delicious fruit, they would find a quick sale for it. *J. S.*

TROPICAL FRUITS FOR THE TABLE.—Mr. Clarke does not appear to have considered this subject in all its bearings. Of the class of fruit he specially refers to, i.e., Custard-apples, Avocado Pears, Mangoes, &c., it is very certain that the general taste does not run this way, in fact, judging from the samples reaching this country, they are one and all beyond comparison inferior to a good Pear or Orange. I think I may safely state that there is not a tropical fruit which is brought into this country with which I am not well acquainted, and, except those which are familiar, such as the Pineapple, Banana, &c., they are only to be considered as curiosities and fit only for window-shows—few are worth eating, not even the beautiful Prickly-Pear. Of tropical and sub-tropical fruits we have abundance, from the aristocratic Pine, to the humble but equally good Orange, and anyone who cannot find a sufficient variety of English and foreign fruits the year round, must be exceedingly hard to please. It is desirable that such fruits as the Mango, Prickly Pear, Avocado Pear, Custard-apple, &c., should be known, but they are simply expensive curiosities, and fade into insignificance beside the humble Strawberry, or even the ripe Gooseberry, of our gardens. There is too much time given to praising the foreign fruit, because we know so little about it; we hear the praises of the Cloudberry, the Japanese Wineberry, and others, but having both grown and eaten these, and many of their relations, I have not found one to compare with a good English Raspberry in any single point. Judging from the samples coming to this country, the best fruits appear to be English, and close on these are the fruits from the warm temperate zone, which include Oranges, Grapes, Peaches, &c. The same remarks apply to Nuts, of which, perhaps, the best foreign ones are the American Butter-nut and the Hickory-nut; but these are both surpassed by the Kent Cob and the good old Walnut. *Thos. Fletcher, Gruppenhall, Cheshire*.

FRUIT CROPS IN ESSEX.—In this district the Apple crop is less than half a crop, and in our garden Keswick Codlin, Warner's King, and King of the

Pippins are the best cropped varieties. The crop is under the average. Sweet and M. Cherries were a bad crop on standard trees; on headed trees only about one quarter of the crop. The Plums generally were under the average. In regard to small fruits, the Strawberry crop was one, but the season was short owing to the drought and Currants and Gooseberries were a thin crop. Fruit-trees carried a wealth of blossom, to which late frosts we had in May proved fatal. *J. Richard, Blythwood Gardens, Stansted, Essex*.

EARLY FROST.—On the 4th inst. we received 4° of frost in the Blane Valley. Hoar frost lay heavy; and during the early part of the morning the sun shone out brightly. The effect of this was that the young growths on Bay Laurels and *Rhododendrons* were destroyed. *D. Brough, Dunn Castle Gardens, Blane, Stirlingshire*.

OROBANCHE SPECIOSA.—When at Carton Kildare, recently, Mr. Black showed me a very pretty white-flowered parasite, under the above name, and flowering quite freely on the roots of a common Broad Bean, which had been reared from sown, presumably, with those of its foster mother. There are four *Orobanches* in *Index Kewensis*, and this name, but the plant I saw at Carton is beautiful enough to be grown for its flowers, apart from interest as a parasite. The stems are chocolate-purple with dense white hairs, and the flowers large for *Orobanche*, nearly pure white, with slight pink veining. I understood Mr. Black to say that Mr. Thompson of Ipswich supplied the seeds, and perhaps he can tell us more of the plant's history and habitat. *F. W. B.*

THE REGENT'S PARK ZOOLOGICAL GARDENS.

It may be assumed that most persons who visit the famous Zoological Garden are attracted thither by the specimens of beast and reptile to be seen; they pause to admire the beauty of the garden, the summer bedding, it is merely an incident of the hour. Yet a person capable of ordinary observation is bound to notice that the beasts' houses are set at considerable distances apart, among kept lawns, shrubberies, and beautiful flower Summer bedding as we practice it at the present is often a compromise between the massing of only just discarded, and the mixed style of the Cecus border. The greater the number of uncoloured species of plants included, while neatness is preserved, and a sufficient amount of colour maintained throughout the season, the more commendation does its execution command.

The best type of summer-bedding is well illustrated in these gardens, and they are as well worthy of a gardener desirous of obtaining new ideas as the best of our London Parks.

Having said this much, it is hardly necessary to add, that beds of one species of plant, massed Pelargoniums or Calceolarias, without being relieved by other plants, are not to be recommended. On the contrary, most of the beds of appreciable size, contain half-a-dozen species, fewer, then two or more edgings are used.

Entering by the north gate, there runs a border upon a terrace on the right side, containing miscellaneous plants as Palms, Fuchsias, Newland Flax, Celosias, Alternantheras, Lobelia (blue white-flowered), and Mesembryanthemum cord variegatum. These are planted in such a way that the effect is good. Opposite this border is on the grass, planted with Palms, but carpeted with *Asparagus plumosus*, among which can be seen flowered Lobelia. The whole is surrounded by *Ophiopogon*, *Jaburan variegata*, and *Mesembryanthemum*, and the bed is edged with *Echeverias*.

In front of the monkey-house there is a pretty flower-garden in three sections, containing diamond-shaped and other beds. The first of these sections have been planted similar to the picture during the summer has been a pleasing one—the result of tasteful planting and persistent attention afterwards.

The feature first observed in these beds consists of Celosias, which are used freely in several of

Mr. Young, who has superintended the gardens for a number of years, has undoubtedly possessed himself of a magnificent strain, the plants producing the long feathery plumes of richest colours so much admired, but so scarce in gardens. But beyond this there has been care exercised that no inferior varieties have been planted in the beds. The best varieties of *Celosia*, as most of us know, produce but little seed, and even from seed from the most perfect plants there may arise a number of indifferent varieties.

Mr. Young raises his plants in pots, and none is put into the beds until the quality of the flower can be estimated. In no other way could such satisfactory effect be obtained. The finest strain of *Celosias* will run back to an indifferent one in a marvellously short space of time if there be not the strictest vigilance exercised.

Looking at one of the beds in this flower garden, we find it planted with *Verbena venosa*, with a band around it of *Iresine Lindenii*, and edged deeply with *Lysimachia Nummularia aurea* (Golden Creeping Jenny). Another one has a centre of fibrous-rooted *Begonias*, having rose-coloured flowers, surrounded with a few *Pelargoniums*, and edged with *Alyssum saxatile variegatum*. The *Celosias* are used as "dot" plants in the centre of the bed, in some of which were counted as many as twenty-two. Several plants mentioned above will please anyone who may not yet have tried them for the purpose. The *Lysimachia* makes an excellent edging to flower-beds, and is very little trouble if it be allowed to occupy the same position for several years. It is a rich and beautiful colour. The *Pelargonium Omphalo*, possessing green leaves and pink flowers, is admirable.

A round bed at the end of the Monkey-house is planted with *Lobelia cardinalis* var. *Firefly* rising above *Chlorophytum*, with a dwarf-growing *Fuchsia* around them. There are some more flower-beds in front of the barn-dens; they run along the side of the path, and are backed by a neat shrubbery. One of these beds contained *Pelargoniums*, surrounded by a band of *Veronica Hendersonii* variegata, then Golden Fleece *Pelargonium*, and *Bluestone Lobelia*. Two other beds contain dot-plants of *Abutilon Souvenir de Bonn*, planted above *Pelargoniums*, and edged with a white-leaved *Pelargonium* named *Princess Alexandra*, and then the Golden-leaved *Lysimachia*. This *Pelargonium* is a gem, but it is very delicate also. The roots are taken up, and propagation is effected in spring, but it is worth the trouble. The centre bed in the design is filled with the newer strain of *Cannas*, with tall plants of *Iresine* around them, and *Lysimachia*. The *Cannas* have bloomed admirably. In another part of the gardens we noticed a large bed of *Hydrangea paniculata grandiflora*, above Golden Privet and *Antirrhinum* mixed together, and edged with *Acalyphas* and *Lysimachias*.

Violas have been excellent, and double-flowered *Zonias* also.

In front of the saloon there are many more beds cut out on the grass. Between and about these are clumps of Bamboos, and during the summer months, large plants of *Dracena australis*, *Agave americana*, *Phoenix reclinata* and other Palms, *Ficus elastica*, &c., are seen. Here is the boldest treatment in the gardens, and some of the beds containing large, fine yellow-coloured *Ricinus*, and similar plants, look admirable. *Acacia lophantha* and *Araucaria excelsa* are planted in the beds, and where dwarfier plants are employed, wherever practicable, the fine *Celosias*, some of them of deepest colour, others pure golden yellow are used.

We have not attempted to describe fully the plants in every bed, but merely to convey an idea upon what system the whole bedding is carried out, and of the success that follows. It may not be seen at its best now, for the autumn rains have caused a little rank growth since these notes were taken, but a visit next summer should afford pleasure and instruction.

SUNFLOWER-PITH.—The lightest substance known is said to be the pith of the Sunflower, with a specific gravity of 0.028, while Elder-pith—hitherto recognised as the lightest substance—has a specific gravity of 0.09, reindeer's hair 0.1, and cork 0.24. For life-saving appliances at sea, cork with a buoyancy of one to five, or reindeer's hair with one of one to ten, has been used, whilst the pith of the Sunflower has a buoyancy of one to thirty-five.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 7.—There was a better display at the meeting held on Tuesday last in the Drill Hall, Westminster, than on the last occasion. A considerable number of Orchids was staged; and collections of *Dahlia* blooms, lady flowers, and several miscellaneous groups of plants, accounted for a considerable amount of space. There were some very fine plants of *Eucharis grandiflora* in bloom, a large group of *Crotons*, and a magnificent display of *Nepenthes* and *Sarracenias*, the former of which served well to illustrate the exceedingly instructive and interesting lecture upon that genus delivered by Mr. Harry Veitch. By the Floral Committee only four awards were made, viz., a First-class Certificate to a hybrid *Nepenthes* from Messrs. JAS. VEITCH & SONS, LTD., and Awards of Merit to a *Dahlia*, a *Michaelmas Daisy*, and to *Hibiscus Manihot*. There was a considerable amount of fruit staged, including large collections from the Queen's garden at Frogmore, and Lord Percy's at Syon. Several seedling Melons were shown, and an Award of Merit was recommended to a variety from Mr. HARRIS, Droymore Gardens.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. JNO. FRASER, H. B. MAY, JNO. JENNINGS, GEO. PAUL, C. J. SALTER, W. BAIN, J. W. BARR, GEO. GORDON, J. D. PAWLE, H. TURNER, CHAS. T. DRURY, GEO. NICHOLSON, R. HOGG, and CHAS. JEFFERIES.

Messrs. CUTBUSH & SON exhibited a group of plants (of *Nerine Fothergillii* major in bloom, interspersed with a few Ferns).

Mr. T. S. WARE, Hale Farm Nurseries, near Tottenham, staged a large group of hardy flowers, as did also Messrs. BARR & SON, King Street, Covent Garden, London. In both cases a Bronze Bankian Medal was awarded.

Messrs. BARR & SON exhibited an effective *Kniphofia* named *Corallina superba*, also a deep-coloured *Gladiolus*, *J. Laing*; and a double-flowered yellow *Datura* known as *Golden Queen*, a sort of hose-in-hose flower.

Messrs. DOBBIE & CO. exhibited a fine lot of blooms of French Marigolds from their Nursery at Orpington in Kent, the strain of which was remarkable for quality.

A group of *Eucharis grandiflora* plants in bloom was shown by Mr. F. KNIGHT EAMES, Fulwell Nursery, Twickenham. The plants were very large, and well-flowered (Silver Flora Medal).

From Messrs. F. SANDER & CO., St Albans, was shown a number of *Gloxinia* blooms of good strains; and Mr. W. J. GODFREY, Exmouth Nurseries, Devon, had two white-flowered Japanese *Chrysanthemums*, named respectively *Queen of the Earlies* and *Barbara Forbes*.

An Award of Merit was obtained by Mr. W. PETERS, Givons Grove, Leatherhead, for a showy variety of *Michaelmas Daisy* known as *Mrs. W. Peters*. Plants two years old, and others raised from cuttings during the present year, were exhibited. The flowers are numerous, but small, white, with yellow disc.

Messrs. E. G. REID, of Beckenham Hill, had several sprays of new *Cannas*; and Mr. EMPSON, gr. to Mrs. WINFIELD, and Mr. FARR, gr. to A. PEARS, Esq., Isleworth, showed new *Crotons*, but no award was made. A variety of *Primula obconica*, with slightly fringed flowers, came from Mr. THOS. LOWSON, Ospringe House Nurseries, Faversham. A number of sprays of *Cannas*, representing about a score varieties, was shown by Mr. ROSE, OWEN, Maidenhead.

Some beautiful specimens of *Nepenthes* came from Messrs. JAS. VEITCH & SONS, Royal Nurseries, Chelsea, most of them strong, healthy plants, with good pitchers. Like all such exhibits from the Chelsea establishment, it was very representative, both of the original species and of garden hybrids. We noticed specimens of *N. Cheloni*, *N. Curtisii*, *Burkei*, *Hookeriana*, *Mastersiana*, several plants showing variability in colour of the pitcher; *N. Morganii*, *Mixta* (one of the recent hybrids figured in the *Gardener's Chronicle*, January 14, 1893), *N. hybrida* var. *Curtisii*, *Dominiana*, also *marginata*, *Purvillei*, &c. One new hybrid was shown, named *N. Tiveyi*, obtained from a cross between *N. Veitchii* and *N. Curtisii* *superba* ♀. The pitcher is pale green blotched frequently with red, about 6 inches long, wings deep, and having long teeth at the margins; margin of mouth nearly an inch wide, deep brownish-red in colour, prettily lined. Lid erect, and very small in proportion to the mouth of the pitcher. The plant bore six leaves, and each carried a pitcher. This handsome hybrid was awarded a First-class Certificate.

Messrs. JAS. VEITCH & SONS also exhibited sprays of *Robinia hispida*, *Acer palmatum sanguineum*, *Hymenanthera crassifolia*, *Hibiscus celsatus* and *H. totus albus*, *H. Lady Stanley*, *Andromeda arborea*, and plants in bloom of *Acidanthera bicolor* (figured in *Gardener's Chronicle*, October 3, 1896) (Silver-gilt Flora Medal).

An extensive group of *Crotons* was shown by Mr. W. FARR, gr. to A. PEARS, Esq., Spring Grove, Isleworth. These were arranged on the floor in the centre of the hall, and occupied a considerable amount of space. Many finely-coloured specimens were observed, and the group was one that would have done credit to any private establishment (Silver Flora Medal).

Mr. Chapman, gr. to R. I. MEASURES, Esq., Cambridge Lodge, Camberwell, obtained a Silver-gilt Flora Medal for a group of *Sarracenias*, *Darlingtonia*, and *Cephalotus*.

Sarracenias *Chelsoni*, *Atkinsoniana*, *Courtii* *crispata*, *Maddisoniana*, *Wrigleyana*, and *melanophoda* were noticed, and some very pretty plants were included.

From Sir TREVOR LAWRENCE's garden at Burford, Mr. Bain exhibited some capital *Peutastemon* grown from seed sown on February 13 last, also sprays of *Lobelia cardinalis* var. *Carmine Gem*, *L. fulgens violacea* (a distinct and pretty variety); flowers of *Mina lobata*, &c.

Messrs. J. CHEAL & SONS, Lowfield Nursery, Crawley, made an exhibit of *Dahlia* blooms of the *Pompon*, *show*, *Cactus*, and single-flowered sections. An Award of Merit was recommended to the variety *F. C. Pawle*, a scarlet-coloured *Cactus*, with a shade of purple. A Silver Flora Medal was awarded to the exhibit.

A collection of *Dahlia* blooms was shown by Mr. ERIC F. SUCH, Maidenhead; and Mr. J. WALKER, of Thame, Oxon., was awarded a Silver Bankian Medal for an exhibit containing upwards of a hundred *Dahlia* blooms, chiefly of show and *Cactus* varieties.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. JAS. O'BRIEN (Hon. Sec.), THOS. STATTER, J. GABRIEL, H. M. POLLETT, F. J. THORNE, T. W. BOLD, H. J. CHAPMAN, A. H. SMEE, J. DOUGLAS, T. B. HEYWOOD, and C. WINN.

Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nursery, King's Road, Chelsea, staged a fine group, rich in beautiful hybrids, and especially in hybrid *Cattleyas* and *Laelio-Cattleyas*, of their own production, who have done so much to extend the number of showy Orchids which flower in the autumn and winter. One of the finest on the present occasion was *Cattleya* × *Euphrasia* (*superba* ♂, × *Warszewiczii* ♀), which had, when first flowered, in a weak state, been awarded an Award of Merit, but was now unanimously voted a First-class Certificate. The fine flower was of perfect shape, the segments of firm texture, and well displayed; sepals and petals light purplish-rose colour; lip very broad and handsome, in colour yellow at the base, with purple markings, the front lobe of a glowing purplish ruby-red, with a very narrow lavender-coloured margin. Another pretty novelty, shown for the first time, was *Cattleya* × *Melpomene* (*Forbesii* ♀, *Mendellii* ♂), a medium-sized flower, of a clear bluish-white, with lilac veining, the base and centre of the lip being yellow, with a few purple markings and raised processes, which plainly indicated *C. Forbesii*. Other handsome hybrids in Messrs. VEITCH's group were *Laelio-Cattleya* × *Epicasta* (*L. pumila* × *C. Warszewiczii*), *L.-C.* × *Eunomia* (*L. pumila* × *C. Gaskelliana*), *L.-C.* × *Callistoglossa* (*C. Warszewiczii* × *L. purpurata*), *L.-C.* × *Clonia superba* (*L.-C. elegans* *Turneri* × *C. Warszewiczii*), *L.-C.* × *Parysatis* (*C. Bowringiana* × *L. pumila*), *L.-C.* × *Stella* (*L.-C. elegans* var. *L. crispata*); varieties of *L.-C.* × *Nyssa* (*L. crispata* × *C. Warszewiczii*), and *C. x Wondlandi* (*C. Warszewiczii* × *C. Bowringiana*), all very handsome and distinct gains. Among the *Cypripediums* were a grand variety of *C. tonsum*, with three flowers; a fine *C. x Coeanthum* *superbum*, with twelve flowers; *C. Charlesworthii*, with sixteen finely-coloured blooms; *C. x Morganii* *langleyensis*, *C. x Mrs. Canham*, *C. x Carnusianum*, *Veitchii* variety, *C. x Melanthus*, *C. x Janet*, *C. x Hornblum*, *C. x Euryales*, some good *C. Curtisii*, and hybrid *Selenipediums*. Of other species noteworthy were *Angraecum* *Eichlerianum*, of singular growth, and bearing large flowers with scoop-shaped labellum, green at the base, and white in front; *Oncidium* *spilopterum*, some gr. *celu* *O. incurvum*, *O. pretextum*; a singular almost wholly light yellow *O. varicosum*; the pretty scarlet *Renanthera matulina*, a good example of *Aerides Lawrencei*, *Cycnches chlorochilum*, *Catasetum* *Bungerthii*, *Laelia monophylla* with sixteen flowers; *Lycaste lanipes*, *Cattleya bicolor*, *Brassia Lawrenceana longissima* (Botanical Certificate); *Odontoglossum* *Urskinneri splendens*, very bright in colour; and other species. The group, which was a fine one in every respect, was awarded a Silver Flora Medal.

FRED. HARDY, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Thos. Stafford), was awarded a Silver Flora Medal for a small but select group of Orchids, the prominent feature in which was a good example of *Cattleya* × *Hardyana*. With it there were of note *Cypripedium* × *Hardyanum* (× *Ainsworthii* × *caudatum*), much resembling *C. macrochilum*; a fine variety of *Laelio-Cattleya* × *elegans*; *Cattleya* × *Ashtonii*; *C. x polypophlebia*, with pretty light lilac flowers, and purple blotch on the lip; *Dendrobium Phalanopsis* *Echroderanum*, &c.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), showed *Rhynchostylis coelestis*, Cambridge variety, a very handsome form, with bright blue lip, and lighter blue tips to the sepals and petals (Award of Merit); and a *Cattleya Schofieldiana* *superba*, large in size and fine in colour.

THOS. STATTER, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. R. Johnson), showed *Cypripedium* × *Lord Derby* (*Rothschildianum* × *superbians*), which received a First-class Certificate when he first showed it, August 13, 1893, and was well illustrated in the *Gardener's Chronicle*, September 28, 1893, p. 357; also *C. x Lady Isabel* (*Rothschildianum* × *Stoneli*); and the handsome *C. x triumphans* (*Schilleri* *Hyeunum* × *cananthum* *superbum*).

Major JOCKY, Sunningdale Park, Sunningdale, Berks (gr. Mr. Fred J. Thorne), showed a strong plant of the fine old *Acineta Parkeri*, with two pendent spikes of large wax like

yellow flowers, spotted with crimson in the centre. The two spikes bore together forty-five flowers (Botanical Certificate).

Mrs. HARRIS, Lamberhurst, Kent (gr., Mr. Huggins), sent *Cattleya* × *Miss Harris* (C. Mossie × C. Schilleriana), a pretty hybrid, partaking much of C. Schilleriana.

WELCHER S. ELLIS, Esq., Hazelbourne, Dorking (gr., Mr. Bartel), showed *Oncidium panduratum*, a species of the O. Wentworthianum class with brown flowers tipped with light yellow (Botanical Certificate).

A. W. WARBURTON, Esq., Vine House, Haslingden, Manchester (gr., Mr. T. Lofthouse), showed the fine yellow-flowered *Cypripedium insigne* var. *Laura Kimball* with two fine flowers.

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), sent *Laelia* × *splendens* (crispa × purpurata); and a small form of L. C. × *Andromeda* (bicolor × elegans Turneri) named L. C. × *Gazelle*.

MESSRS. HUGH LOW & CO., Clapton, showed *Cattleya* × *Minnica* (Loddegesii × Warscewiczii), in good form; *Cypripedium* × *Alfred Hollington*, and other *Cypripediums*.

MESSRS. FANDER & CO., St. Albans, sent *Cypripedium* × *callo-Rothschildianum*, C. × *barbatum* × *Rothschildianum*, the pretty *Maxillaria striata*, *Odontoglossum Kramerii* with twenty flowers; the pretty natural hybrid *Miltonia Peetersiana* with dark rose flowers barred with purple; *Miltonia spectabilis* Moreliana, &c.

Fruit Committee.

Present: Philip Crowley, Esq., chairman; and Messrs. Geo. Bunyard, H. W. Ward, G. W. Cummins, T. J. Saltmarsh, A. H. Pearson, J. Wright, C. Herrin, J. W. Bates, W. Farr, W. J. Empson, G. H. Sage, Geo. Wythes, H. Balderson, J. Smith, Geo. Reynolds, and J. Willard.

In the Veitchian competition for flavour, the 1st prize for Apples was taken by Mr. J. MAYNE, Bilton Gardens, Devon, who showed Kerry Pippin, from an espalier tree on the Crab stock. The 2nd prize was awarded to a dish of Gravenstein, shown by Mr. Geo. Wythes, gr. to Earl Percy, Syon House, Brentford. The best Pear was Williams' Bon Chrétien, from Mr. Herrin, gr. at Dropmore, obtained from a bush-tree upon the Quince stock. The same variety from Mr. WYTHES was placed 2nd.

Several good seedling Melons were shown, and to one of these, named Mrs. Herrin, shown by Mr. HERRIN, an Award of Merit was recommended. This was obtained from a cross between La Favourite X, and an unnamed seedling. It has white flesh, uncommonly deep, of good flavour, and very juicy; exterior is straw-coloured, netted, of moderately large size. The cavity in this Melon is very small. Mr. HERRIN also exhibited a fine fruit of Diamond Jubilee Melon, a variety shown at the last Temple Show, when it was given an award.

Mr. Miller, gr. to Lord Foley, Ruxley Lodge, Claygate, exhibited fifteen large, handsome fruits of Princess of Wales Peach for which a Bronze Knightian Medal was awarded. He had also a dish of Yorkshire Beauty Apples, a large, rather flat shaped culinary variety with considerable colour upon one side.

An Award of Merit was recommended to Scarlet Runner Bean, Bunyard's Hill prize, shown by Mr. W. J. EMPSON, Amptill Gardens. The pods were about 10 inches long. Mr. W. MITCHELL, Fir Cottage, Farnham Royal, Slough, exhibited fruits of a Seedling Blackberry, and sprays of same. The fruits were very fine, and this variety free cropping (Award of Merit).

Mr. J. Coles, gr. to H. J. WALKER, Esq., Balcombe, Sussex, obtained a cultural commendation for a dish of beautiful fruits of Exquisite Peach.

Mr. W. KEMP, The Gungah, Barnes, was awarded a Silver Banksian Medal for an exhibit of twenty-four good Melon-fruits, representing several of the finest varieties.

Madresfield Court Grapes in three bunches from C. BAYER, Esq., Forest Hill, gr., Mr. W. Taylor, were deservedly awarded a Cultural Commendation; and a similar honour was deservedly given to a dozen Stirling Castle Peaches shown by Mr. W. Howe, gr. to HENRY TATE, Esq., Streatham Common.

From the Royal Gardens, Windsor, Mr. O. THOMAS exhibited a large number of Peaches and Nectarines, all grown out-of-doors. The varieties were Violette Hâtive, Stirling Castle, Prince of Wales, Alexandra Noblesse, Princess of Wales, Grösse Mignonne, Premier, Buckingham Mignonne, Bellegarde, Barrington, Alexandra Noblesse, Teton de Venus, Hardwick Seedling, Raymaker, Dr. Hogg, Dymond, Condor, and Crimson Galande, Nectarines, Pine-apple, Victoria, Hardwick Seedling, Humboldt, Violette Hâtive, Prince of Wales, Spencer, Lord Napier, and Oldenburg. Some Golden Jubilee Tomatoes shown were perfect in shape, heavy, and of pretty appearance. A Silver-gilt Knightian Medal was deservedly awarded.

A collection of fruits, embracing seventy dishes, was shown by Mr. Geo. WYTHES. The bulk of these were Apples and Pears, many fine dishes of each being noticed. In addition, there were fifteen dishes of Peaches in as many varieties; four Nectarines, viz., Elruge, Dryden, and Humboldt; four varieties of Plums, viz., Pound's Seedling, Archduke, Victoria, and Purple Gage; Shropshire and Cluster Damsons, a dish of Mulberries, and Morello Cherries. The collection was a very praiseworthy one, and a Silver Knightian Medal was awarded.

From JNO. RUSSELL, Esq., Richmond, were some uncommonly well-cropped Tomato plants from out-of-doors; the variety was Campbell's Prolific.

Lecture on Nepenthes.

Mr. HARRY J. VEITCH, who delivered a lecture upon this genus of plants, avoided going over the ground traversed by Professor Vines before a meeting of the Royal Horticultural Society on June 15 last, when the power possessed by *Nepenthes* to decompose and digest in the pitchers various organic bodies was explained and defined. Mr. Veitch commenced by tracing the early history of these interesting plants, and gave particulars as to time and circumstance when many of the typical species were introduced. Until the commencement of the nineteenth century, the known history of the genus is fragmentary to some degree; but afterwards the introduction of the various species can be followed with comparative certainty. Thus Mr. Veitch referred to *N. Rafflesiana* introduced from Singapore in 1815, *N. Hookeriana* from Borneo, in 1847, and many others. A large number of species were introduced between 1880 and 1890. The Seychelles *Nepenthes*, *N. Purvillii*, was illustrated by a plant bearing several pitchers that had been kindly lent by the Director of the Royal Gardens, Kew, who, in an accompanying letter, remarked that it had taken more than a quarter of a century to introduce this species to Britain. Mr. Veitch spoke at some considerable length upon the species obtained from Borneo, and one of these, *Rajah*, which produces a very handsome pitcher, but is very difficult of cultivation in this country, was illustrated by a dried Pitcher from Borneo, and a fresh one that had been produced in the hothouses at the Royal Gardens, Glasnevin, Dublin. Mr. Moore, the skillful director there, had obtained a Pitcher rather more than two-thirds as large as the one produced naturally, and as the achievement is without parallel in the case of this species, Mr. Moore is to be congratulated. Mr. Veitch, when speaking of the plants, in most cases alluded to the specific characters, and with the fresh and dried specimens at his hand, he was able to impart to his hearers a very large amount of interesting information. Passing from a review of the species, to speak of the hybrids that had been obtained by hybridisation in this country, Mr. Veitch said, that though there were probably forty varieties considered hybrids, he thought that many of these were merely varieties from hybrids, and that certainly there had not been that number of crosses effected. There have been ten hybrids raised at Chelsea, already distributed, and Mr. Veitch was enabled to show some of these in comparison with the parents, and to explain what characteristics had been secured in the progeny, that for horticultural purposes made it more valuable than either of its parents. Instancing *N. Mastersiana* and a few others, it was an easy matter to show that some of the very best plants in the genus were hybrids; and Mr. Veitch was on very safe ground when he declared that whilst certain species would always claim a prominent position in gardens, the effect of the work of the hybridist would be that a great number of varieties would be raised that would yield fine pitchers, and combine with this property a strong habit of growth, and eventually, as a race, they would be more useful to the gardener than the original species. This much has already been proved: that the hybrids raised as seedlings in English hot-houses are much more amenable to the artificial culture essential in this climate than are the species. There are some hybrids possessed by the Chelsea firm that have not yet been shown or distributed, and one was before the meeting on Tuesday. It was named *N. Tiveyi*, and is alluded to in the above report.

Next, Mr. Veitch devoted some time to a description of the botanical features of the genus. Some coloured drawings helped greatly to supplement these remarks. The diocious flowers were described, the essential organs, male and female. The processes of pollination and fertilisation were explained, and the time which elapsed between the one and the other given. A few pots of seedlings one year old, and others a little more advanced were shown, and the rate of progress of growth at that stage and subsequently, were matters referred to in detail. The first true leaves produce pitchers, and these become larger on succeeding leaves, in proportion as the strength of the plant increases.

The concluding part of Mr. Veitch's admirable paper was devoted to a description of the habitats of most of the species. The conditions of climate the plants naturally enjoy were given precisely, and statistics of rainfall, temperatures, humidity of atmosphere were given that had been taken from observations made at meteorological stations.

Following the reading of the paper, Mr. F. W. Burbidge, M.A., Curator of the Botanical Gardens at Trinity College, Dublin, remarked upon the subject under discussion at considerable length. He first referred to the Pitchers themselves, and reminded the audience of the insect-digesting powers they had, suggesting that Nature had prompted the plants to develop this means of obtaining nourishment in order to compensate for the disadvantages attending a weak root-system. Passing, Mr. Burbidge had something interesting to say about the Bornean species at home, and of his experience when collecting some of them in company with Mr. Peter Veitch. From personal observation, too, Mr. Burbidge described the white mist that is peculiar to great altitudes in Borneo, and how all vegetation in this zone is continually wet, and the temperature cooler, but unusually even. Cultivators in this country had to produce circumstances as nearly like these as possible. In an ordinary *Nepenthes*-house (Mr. Burbidge reminded his hearers) air should be allowed to enter the house from the bottom, but that no top ventilation should be open at the same time. A better system Mr. Burbidge thought would be to build a structure for the *Nepenthes* without any special means of heating it; surround this with the hottest of the stoves, and by allowing the air to pass from these into the cooler atmosphere of the *Nepenthes*-house a condensation of moisture would occur as nearly as possible resembling the natural state of things.

READING HORTICULTURAL

SEPTEMBER 1.—Nothing is more depressing than a show held during a gale, accompanied by drenching and it was under such circumstances the usual summer of this Society took place. As usual, the display was in the Abbey ruins, and the tent covering being shaped, quite a deluge of water came through at points. The weather kept visitors away, and a great must result. This was all the more to be regretted, generally a good exhibition; some of the fruit, vegetables especially, being superb.

PLANTS.—Stove and greenhouse plants were all eight, the 1st prize being taken by Mr. W. FINK, O. Mr. Chamberlain, gr. to F. M. LONERGAN, Esq., Cres Park, took the 1st prize with four specimens. 1 specimen plant in flower was *Erica Marnockiana*, 1 Peel, gr. to Miss Todd, Shirley, Southampton; Mr. gr. to J. B. KANSLAKE, Esq., Whiteknights, coming 2 a superbly-grown and flowered light-flowered *Fuchsia Western Beauty*. Orchids were poorly shown, but better is late for them. *Fuchsias* were shown by Mr. large, finely-grown pyramids, admirably blooming, Wilson, gr. to Mr. B. GARLAND, Lower Redland, 1 *Lilium*, double zonal *Polargonium*, and tuberous were not exceptional. In the amateurs' divisions, staged in fours made a good show, Mr. Smith, gr. NIELD, Reading, taking the 1st prize.

Stove and greenhouse Ferns were well shown Willis, gr. to H. C. SIMMONDS, Esq., Reading, who excellent specimen of *Microlepia birta cristata*, also *phila australis*, *Cibotium princeps*, &c. Mr. Leith A. R. WELCH THORNTON, Esq., Basingstoke, was 2nd latter had the best four fine-foliaged plants, having coloured piece of *Croton Queen Victoria* among them.

Mr. PEEL had the best three Palms, staging 3 examples, consisting of two fine *Kentias*, and a *Lat. bonica*. Mr. G. LEWIS was 2nd. *Coleus* were also the best of them in the form of bright-foliaged pyramids.

GROUPS.—One extremely interesting feature at the exhibition was the competition in the large group class 180 feet, arranged on the turf banks in the Abbey ruins were four competitors, there being offered by Messrs. & Sons a very handsome chased Silver Cup of the 25 guineas, which is held for a year by the holder, addition a cash prize of £5. This was won by Mr. 1 to Miss Todd, with a very tasteful arrangement, in usual subjects were grouped in a skillful manner. has to be won three times in succession before it can outright. Mr. Pope, gr. to J. P. WHITE, Esq., Wargrave 2nd. There were several competitors with small group 180 feet, Mr. CHAMBERLAIN taking the 1st prize.

CUT FLOWERS.—Among the cut flowers Dahlias took The best eighteen blooms came from Mr. J. WALKER, run very close by Mr. S. MORTIMER, Farnham, who both stands contained excellent blooms. Mr. J. R. T. Henley-on-Thames, had the best twelve bunches, as SUCH, Maidenhead, was 2nd. The best six bloom amateur division came from Mr. G. LEWIS. Messrs. & Sons, Crawley, had the best twelve bunches of flowered, among them *Duchess of Marlborough*, white with crimson-purple, was very striking. Mr. MORT the best eighteen blooms of *Cactus Dahlias*. Mr. W had the best twelve, and was also 1st with the same of Tea Roses; but storms had affected them. In the class of twelve, W. C. ROMAINE, Esq., Windsor, was

MESSRS. J. CHEAL & SONS had the best twelve *Glaudiolus*; MESSRS. WALLACE, Colchester, was 2nd FINCH had the best twelve bunches of cut flowers, mainly stove and greenhouse subjects.

FRUIT.—In the class for eight dishes of fruit prize went to Mr. Gleeson, gr. to C. E. KEYS Warren House, Stanmore, who had finely-finished Muscat and Black Hamburg Grapes, both showing lent culture; a grand Smooth Cayenne Pine-apple Turkey Figs, Pittaston Nectarine, Barrington extra fine in size and colour; Golden Gem M. splendid Morello Cherries. Mr. POPE was 1st Muscats, Smooth Cayenne Pine, and Favourite 1 good.

With six dishes, Mr. Howard, gr. to Mrs. MET ham Park, was 1st, with fine Pine-apple Nectarine Castle Peaches, and good Grapes; Mr. CHAMBER the 2nd prize. Mr. W. Fyfe, gr. to Lord WASTAGE Park, was very successful with Grapes, showing examples. He was 1st with three bunches of Bl burgh, also with any other black variety, and w Muscats. In the latter class, Mr. Cole, gr. to Sir G. Bart., Swallowfield Park, had three large w bunches, but the berries were rather small. The r in upon Peaches, Nectarines, Apricots and Plum Ross, gr. to Captain A. J. CARSTAIRS, Welford Park, had the three best dishes of culinary Apples; Mr. Benham, was 2nd. Mr. TURTON, Maiden Erlegh three best dishes of culinary Pears. Dessert Peas &c., were shown; also Cucumbers, as near per shape and size as could well be imagined.

VEGETABLES.—The handsome money-prizes given SUTTON & SONS for twelve distinct kinds of brought thirty-seven collections. Seven prizes were Mr. R. LYE, The Gardens, Sydnonton Court, New the 1st prize with a collection so perfect as to be desired. Mr. BOWERMAN, The Gardens, Hack

Basingstoke, was 2nd. These collections, the first seven or eight of which were of high quality, made an exhibition in themselves. Mr. NICHOLLS, The Gardener, Malshanger, Basingstoke, took the 1st of Messrs. WOOD & SONS' prizes for his kinds; and Mr. JOHNSON gr. to A. GILLIAT, Esq., was 2nd.

MISCELLANEOUS.—Fine and showy miscellaneous collections of cut flowers, &c., were shown by Messrs. JAMES VERN & SONS, Chelsea, J. LAING & SONS, Forest Hill, WILKINSON & CO., of Colchester, and others.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

SEPTEMBER 1.—One of the best displays of fruits, flowers, and vegetables ever seen in the western capital of Scotland was made on the above date. At the main entrance were large exhibits of cut flowers from several nurseries; and plants and flowers from Mr. M. CUTHBERTSON of Rothesay filled a large space. Blooms of herbaceous plants were strongly in evidence, and interspersed with florist flowers of brilliant colour, they made a great display. Mr. FORBES of Pawick had large collections of hardy flowers and Carnations; and a large and choice collection of Dahlias and Pansies was shown by Mr. T. SMELLIE.

Messrs. DOBIE & CO., of Rothesay, had a table 45 feet long furnished with products from their Rothesay grounds. Their Pansies were very fine, and there was an immense collection of all classes of Dahlias. Spikes of stately Hollyhocks backed up this large exhibit. An exhibit from Mr. CAMPBELL, High Blawithie, contained many Dahlias and Carnations.

Roses were of much excellence, and Mr. CROLL, of Dundee, obtained the 1st prize for twenty-four blooms. Messrs. CARR of Aberdeen, were 2nd, with a handsome exhibit.

Dahlias made a considerable display, and many growers competed well in the various classes. Mr. CAMPBELL of Blawithie was 1st for the larger collection; and Mr. SMELLIE, of Marigolds, Asters, Pansies, and Antirrhinums of good quality were present in quantity.

In the larger hall, tables of plants for exhibition were not so numerous as on some former occasions. Messrs. SMITH & SONS had a large exhibit of choice foliage and flowering plants, and Messrs. AUSTIN and McALAN had a fine display of plants on and in front of the large platform.

Mr. D. WILSON, gr. to Mr. STEPHENS, Westmount, was 1st, showing a table of beautiful plants, including Odontoglossums and other Orchids. The 2nd prize was taken by Mr. MILLER, gardener at Auchensalth.

A large table filled with bouquets in great variety was the centre of much admiration.

Table plants were numerous, and the competition in the class for six specimens was keen.

Fruit generally was remarkably good, especially black Grapes; Muscats, too, were well shown, and some of them were finely coloured. Apples, Pears, and Plums were less numerously shown than usual. Mr. D. MURRAY, gr. to the Marquis of Ailes, Culzean Castle, was the only exhibitor in the class for a collection of twelve sorts. He had a remarkably handsome Queen Pine, capital Nectarines, Brown Turkey Figs, Best of All Melon, and good Grapes, but we have seen Mr. MURRAY's Grapes much finer than they were this season. Mr. AIRDRIE, Lurbert House Gardens, was 1st for six dishes; his Black Hamburg Grapes, Sea Eagle Peaches, Pine-apple Nectarines, and Figs were first-rate. Mr. BURMAN, gr. at Bargany, was a good 2nd, but some of the fruits were past their best.

The tempting prize for four bunches of Grapes was carried off by Mr. AIRDRIE, beating Mr. LEALIE, of Pitruillen, who has never before been beaten in this class at Glasgow. Mr. AIRDRIE's bunches were Muscat Hamburg, Moscat of Alexandria, Madresfield Court, and Black Hamburg, large in bunch and berry, and highly finished; Mr. LEALIE had fine Muscats of Alexandria.

Fifteen bunches were tabled in the class for Black Hamburgs. Mr. MENZIES, gr. at Drumleopard (?), was 1st, with a grand pair of bunches; Mr. AIRDRIE, Lurbert, was a close 2nd.

Mr. LEALIE's 1st prize pair of Muscats of Alexandria were remarkably fine; Mr. AIRDRIE was 2nd with well-coloured bunches.

The other classes for Grapes were well contested, and that for the heaviest bunch was won by Mr. LEALIE, who staged one weighing 8 lb.

Apples were not remarkable for size or quality; neither were Pears. Peaches, though not numerous, were fine in size and colour. Mr. AIRDRIE was 1st with Sea Eagle. Nectarines were very fine especially the 1st prize exhibit of the variety Pineapple from Mr. MURRAY.

A large hall was crowded with vegetables of fine quality. Mr. BROWN, gr. at Houston, had a capital collection; Leeks, Celery, Peas, and Potatoes being as fine as they are ever likely to be seen at a September show. Potatoes were remarkably well exhibited, and were, without exception, clean and of fine form. The exhibits from amateurs were numerous and good.

NATIONAL DAHLIA.

SEPTEMBER 3, 4.—The annual exhibition of this Society was held on the above dates, at the Crystal Palace. In face of the unusually severe gales of the forepart of last week, Dahlia growers had not anticipations of a record show, for

each of them was painfully aware of the difficulty attending the preservation of their own flowers from the effect of wind and rain. We do not intend to speak of the exhibition in the superlative degree but there can be no hesitation in describing it as very satisfactory, and much beyond general expectation. No doubt, the strongest section was that of the Cactus-like flowers; there was much competition in the classes, and the flowers were decidedly good. Indeed, such a bank of Cactus blooms as was produced by the classes for eighteen and twelve varieties has seldom, if ever, been staged. From an exhibition point of view, the section next popular was the show type—the large, symmetrical, "spat" looking flowers, as if chiselled, but possessing colours of beautiful and varied shades. Too solidly heavy to cut for decorative purposes, they seem to be cultivated for the exhibition boards alone. The decorative flowers were few, and they are merely a compromise between the show and Cactus types. Pompons are useful for decoration, and they are most effective in the flower-borders. There were several exhibitors in these classes, which we think it would be more pleasing were greater care to be used in the selection of the smallest most "Pompon" like flowers. Single flowers, the petals of a dozen years ago, are partially neglected, and it is easily seen that the circumstance is due to the marvellous development in the Cactus section. The few exhibits of single flowers, however, were so good as to suggest, "Why has our popularity decreased?" Single flowers with longitudinally recurved petals, and describe a single-flowered Cactus, do not appear to find much favour unless with persons who admire an æsthetic kind of decoration.

Many new varieties of Dahlias were submitted for Certificate; and, as usual, these were principally of the most popular sections. One of the very best was the Cactus bloom shown by Mr. WEST, and named Island Queen, a pure mauve-coloured flower, and distinct from any hitherto raised.

COMMEMORATION CLASS.

The principal class at this Exhibition was one known as the Commemoration Class, in which tempting prizes were offered for the best decorative display of Dahlia blossoms, together with ornamental foliage plants, &c. These groups were staged on a table-space of 13 feet by 6 feet, and were intended to advantageously display the development that has taken place in the Dahlia during the Victorian Era.

As a matter of fact, the exhibits were decorative arrangements of Dahlia blooms, and nothing more. The Victorian Era was only suggested by the collection awarded 1st prize, and this suggestion consisted in a rather stiff-looking crown composed of a yellow Pompon Dahlia, and by the monogram V.R. with 1837 on one side, and 1837 on the other, all in Dahlia blooms. In a group arranged for effect, it would have been dangerous to have sought by comparison to demonstrate the development that has taken place, and the task was not attempted. Apart from this failure to comply with the schedule, the two collections were satisfactory. As pictures, the 2nd prize collection was the more enjoyable, but it did not thrust the Dahlia forward so well and thoroughly as in Mr. M. V. SEALE's collection from Sevenoaks. Few plants were used in the latter exhibit, and there was a profusion of cut blooms, in sprays, upon pillars, and as shower bouquets, and it probably deserved the 1st prize awarded to it. Messrs. J. CHEAL & SONS, Crawley, employed much fewer flowers, and they were well toned down by a profusion of suitable foliage. A cone, with a Palm-capped top, was the least pleasant feature in this stand.

SHOW AND FANCY BLOOMS INTERMIXED.

There were five collections in the class for sixty blooms, and it was an exhibit of considerable merit that won the 1st prize for Messrs. KEYNES, WILLIAMS & CO., Salisbury. We will give the varieties as being of interest in this noteworthy year:—Back row: W. Rawlings, Emin Pacha (very fine bloom), Harrison Weir, J. T. West, R. Dean, Mr. Chamberlain, M. Campbell, Chieftain, Duchess of Albany, Mrs. C. Noyes, Harry Keith, Rev. J. B. Camm (sport), a distinct coloured flower; Duke of Fife, Dorothy, Colonel, Geo. Birnes (self), J. Hickling, beautiful soft yellow; A. Ocock, Pelican, and Gaiety (sport). Centre row: Buffalo Bill (dark crimson self), Florence Tranter, Imperial, Royal Queen, Rev. J. B. Camm, Comte de la Saxe, R. T. Rawlings, Nellie Cammel, Mrs. Saunders, Alice, Emily, Gaiety, curious markings of red, yellow, and white; Thomas Hobbs, William Powell, yellow; Arthur Rawlings, Virginal, Buffalo Bill, Miss Barber, H. Walton, Mr. Glascock, and Duchess of York. Front row: Niblan, Mrs. Langtry, Miss Cannell, W. Keith, Mrs. Every, Mrs. McKenzie, Dazzler, T. S. Ware, Mrs. W. Slack, Seedling Yellow with reddish edges, H. Bond, Mr. Spoforth, Hon. P. Wyndham, Shott's-ham Hero, Goldsmith (yellow sport, with deep red margins), Mrs. Morgan, Golden Pledge, Kathleen (very pretty tint), Rebecca (self), and Mrs. Gladstone. The colours might have been more effectively disposed in this stand. Mr. CHAS. TURNER, Royal Nurseries, Slough, was 2nd, with an even lot of medium-sized blooms, of good colours, and well put up.

In the class for forty-eight blooms, distinct, there were again five exhibitors, the chief honour being won by Mr. J. WALKER, Thame, Oxon. We noticed in this stand of praiseworthy blooms, excellent examples of Chorister, John Hickling, Jno. Standish, Victor, Harrison Weir, H. Walton,

Dorothy, Eclipse, Perfection, Glow-worm, one of the brightest of Dahlias; Peacock, Maud Fellow, Emin Pacha, and others; Mr. C. TURVER, again showing smaller, well-formed blooms, was 2nd; and Mr. S. MORTIMER, Rowledge, Farnham, was 3rd, exhibiting commendable blooms.

Of thirty-six blooms, distinct, there were only three collections, and the 1st prize was taken by Mr. G. W. HUMPHRIES, Twickenham, with an exhibit of capital blooms of moderate size; Mr. J. WEST, Tower Hill, Brentwood, was 2nd; and Mr. J. BRECKWICK, St. Leonards-on-Sea, 3rd.

Mr. G. W. HUMPHRIES won the class for twenty-four blooms with a collection containing fine specimens of Colonel, Jas. Stephens, Mrs. Sanders, Mrs. John Dawkins, Harry Keith, W. Powell, Mrs. Gladstone, and others. The only other exhibitor in this class was Mr. J. WEST, Tower Hill, Brentwood, whose blooms were a little below good exhibition size.

The best exhibit of twelve blooms was from J. R. TRANTER, Esq., Henley-on-Thames, who had Chieftain, Duke of Fife, Florence Tranter (fine bloom), Jas. Cocker, Duchess of York and Miss Cannell (both pretty edged blooms), Shirley H. B. R. T. Rawlings, Rosamond, Mrs. Langtry, Arthur Rawlings, and Matthew Campbell; Mr. A. RAWLINGS, Romford, was 2nd; and Messrs. J. CHEAL & SONS, Crawley, 3rd.

Cactus blooms.—These were the feature of the show, and elicited general admiration. There were seven competitors in the class for eighteen varieties in bunches of six blooms each, and in a marvellously keen competition the 1st prize was gained by Messrs. J. BURRILL & CO., Howe House Nurseries, Cambridge. The varieties staged were Mrs. A. Beck, Falsa, a soft purplish-red coloured flower; Mrs. Wilson Noble, rather less deep in colour than we have seen this comparatively new variety; Lady Penzance, a charming yellow flower; Mrs. F. Fell, white; Earl of Pembroke, purple; Gloriosa, Delicata, a most beautiful bloom; Chas. Woodbridge, Harmony, Fusilier, Fantasy, with crab-apple-like petals; Mrs. Kingsley Foster, Matchless, Casilda, Starfish, excellent scarlet variety; Cinderella, and Hagulus, a deep crimson self of excellent quality, and awarded the Society's First-class Certificate. Messrs. KEYNES, WILLIAMS & CO., Salisbury, took the 2nd prize, an enviable one in such a competition. This firm included several new varieties, such as Mary Service, Stella (scarlet, crimson), Alfred Vasey (salmon red), Ruby (crimson and purple), and Archino, a bizarre-looking flower with much recurved petals (white and red, centre of each petal white). Messrs. J. CHEAL & SONS were 3rd, and included a few new ones also, notably, King of Siam, a deeply-coloured flower, the inner petals of which are almost black.

Mr. J. WEST was the winner of the 1st prize for a collection of twelve varieties, beating Mr. G. W. HUMPHRIES, 2nd; and Mr. S. MORTIMER, Farnham, 3rd. In Mr. West's stand was a pure mauve-coloured variety named Island Queen, and awarded the Society's First-class Certificate. There were several seedlings of some merit, J. C. Drower and Eileen Palliser were very fine blooms. Two 2nd and 3rd place collections were very good.

Decorative Varieties.—There were three exhibitors in a class for twelve varieties, in sprays of six blooms each. The 1st prize was taken by Mr. M. V. SEALE, Sevenoaks. The collections made a pretty offset. Messrs. J. CHEAL & SONS were 2nd, and Mr. JNO. CHARLTON, Tunbridge Wells, 3rd, each staging commendable exhibits.

Pompons.—The largest class in this section is for twenty-four varieties, and they are shown in sprays of ten blooms each. Messrs. KEYNES, WILLIAMS & CO. were 1st, with a praiseworthy lot of blooms, inclusive of a seedling under the name of Agate, pale lemon in colour, very slightly marked with pale purple. The other varieties call for no special remark. The 2nd prize was awarded to a collection from Messrs. J. CHEAL & SONS, which appeared to run very closely the exhibit just noticed. The blooms were good, and in addition to being fairly representative, they were set up very neatly; Mr. C. TURNER, Slough, was 3rd, and showed several novelties, including Ida, yellow, with crimson edge; Snowflake, white; and Hypatia, pale red, with yellow centre. There were four competitors.

The class for twelve blooms was won by Messrs. J. BURRILL & CO., with a praiseworthy exhibit of the choicest varieties. Mr. J. WEST was a good 2nd, and obtained a First-class Certificate for the variety Nellie Broomhead, exhibited in this collection. It is of capital form, and the colour is very pretty mauve. Mr. G. H. HUMPHRIES was 3rd.

Single flowered Varieties.—Messrs. J. CHEAL & SONS, Crawley, were 1st in the class for twenty-four varieties, and they were shown similarly to the Pompons in bunches or sprays of ten blooms each. The stand was a good one, and well calculated to display the charms of the single-flowered section. The 2nd prize was taken by Mr. M. V. SEALE, who is also entitled to a share of praise.

The class for twelve varieties found but one exhibitor, viz., Mr. J. WALKER, Thame, Oxon, who had a stand of capital blooms, staging the following varieties: Miss Roberts, Northern Star, Amos Perry, Mude, W. C. Harvey, Formosa, Duchess of Westminster, Victoria, Lowfield Beauty, Mrs. Bowman, and Eclipse.

AMATEURS.

The classes for amateurs were well filled, and the number of exhibitors in this division is on the increase. The best twenty-four blooms of show and fancy varieties, came from Mr. THOMAS HOBBS, Lower Easton, Bristol, a veteran who commenced to exhibit in 1852, and on this occasion headed the nine other competitors. He had well-finished blooms of

Duchess of York. Vice President, John Hickling, Matthew Campbell, Imperial, Mrs. Gladstone, Mr. W. Slack, Thomas Hobbs, Muriel Hobbs (new), Prince of Denmark, &c. Mr. A. STARLING, Havering, Romford, was 2nd. Mr. S. COOPER, Chippenham, had the best twelve show varieties; and Mr. W. MIST, Igham, was 2nd. Mr. C. KEEP, Streatham, came in 1st with the best six, and Mr. G. WYATT was 2nd.

In the amateurs' division, fancy Dahlias are still shown by themselves. Mr. S. COOPER took the 1st prize with twelve, having, in good character, Frank Pearce, Mr. J. Down's, Mr. Saunders, Sunset, Matthew Campbell, Lottie Eckford, &c. Mr. R. BURGIN, St. Neots, was 2nd. Mr. A. STARLING was 1st with six blooms, having the Rev. J. B. M. CAMIN, S. Mortimer, Peacock, Duchess of Albany, S. Cooper, and Dazzler. Mr. E. JEFFRIES, Langley Burrell, was 2nd. There was a class also for maiden growers, which brought a good competition.

The amateurs made a good display with Cactus varieties. Mr. W. MIST taking the 1st prize for twelve bunches of six blooms; chief among them being Starfish, Mr. Wilson Noble, Mr. A. Beck, Miss A. Nightingale, Masterpiece, and Gloriosa. Mr. E. BROWN, Horley, was 2nd.

The best six bunches were shown by Mr. E. MAWLEY, Berkhamsted; Mr. C. E. WILKINS, Swanley Junction, 2nd. Messrs. J. CHEAL & SONS offered prizes for nine bunches, the best coming from Mr. WILKINS, who had Mr. Wilson Noble, Lady Penzance, Fusilier, and Charles Woodbridge, the latter being very fine this season. Mr. H. A. NEEDS, Horsell, was 2nd. In the Maiden class for six bunches, Mr. F. SHARP, Twyford, took the 1st prize.

The best six varieties of Pompon Dahlias were shown by Mr. W. C. PAGRAM, Weybridge, chief among them were White Aster, Arthur West, Phoebe, and Sunshine; Mr. J. HUDSON was 2nd.

Mr. E. JEFFRIES had the best six varieties, six blooms of each; Mr. G. WYATT was 2nd.

Mr. T. W. GIRDLESTONE, Sunningdale, took a 1st prize with six bunches of ten blooms of single Dahlias, having attractive varieties in Cadet, Naomi, Tighe, Jeannette, Polly Eccles, Phyllis, and Fred. Leslie. Mr. C. OSMAN was 2nd.

Mr. E. MAWLEY had the best six bunches of six blooms, Beauty's Eye, Demon, and Miss Roberts being his best; Mr. J. HUDSON was 2nd.

Mr. J. HUDSON took the 1st of Messrs. DOBBIE & Co.'s special prizes for six single Cactus Dahlias; and Mr. C. OSMAN was 2nd.

OPEN CLASSES.

The series of classes for six blooms of one colour of Show and Fancy Dahlias is useful as bringing out the best of each. Thus, the best dark was the Prince of Denmark, from Mr. M. W. SEALE, Shirley Hibberd, and William Rawlings following. We do not appear to have any light Dahlia which can beat Mrs. Gladstone—it was 1st, 2nd, and 3rd, Mr. MORTIMER having the best. The leading yellow self was John Hickling, from Mr. MORTIMER, J. N. Keynes, and R. T. Rawling following in order. A bright self-form of the Fancy Mrs. J. Downie, won the 1st prize for a red Dahlia for Mr. MORTIMER, John Standish and Arthur Rawlings being 2nd and 3rd. The best white was John Walker from Mr. WALKER, which when at its best no other white self can compete with. Mr. G. HUMPHRIES had the best tipped Dahlia in Mrs. Saunders, and it took the 2nd prize also. Mr. SEALE had the best striped in Mrs. Downie, and it was 2nd also. The best edged Dahlia was Miss Cannell, from Mr. J. WALKER; J. T. West came next in merit.

NEW DAHLIAS.

Certificates of merit were awarded to Messrs. J. BURRELL & Co., Cambridge, for Cactus Dahlia *Regulus*, deep shaded crimson, a flower of fine shape. To Mr. F. BONNY, for single Dahlia *Colton Beauty*, the sides of the petals edged with soft yellow, very chaste and pleasing. To Messrs. KEYNES & Co., Salisbury, for Cactus Dahlia *Alfred Vasey*, brilliant orange-salmon, flushed with rose on the points of the florets; Mary Service, the base golden-salmon, the points of the florets rose-mauve; Capstan, salmon, suffused with red; and Arachne, the curious tubular florets, white, margined with reddish crimson, and incurving towards the centre—all very fine. To Mr. J. R. TRANTER, for show Dahlia *J. R. Tranter*, a pale orange self, of fine outline, and somewhat distinct in colour. To Mr. C. TURNER, for Pompon Dahlia *Hypatia*, bright terra-cotta, with golden centre—very pleasing. To Mr. J. STREDWICK, St. Leonard's, for Cactus Dahlia *Daffodil*, soft yellow, of exquisite tint and shape; Tillie, salmon, suffused with pale rose, the florets tinged with a ft mauve; and Night, rich maroon, tinted with fiery-crimson towards the edges of the petals—all very fine quality. To Mr. T. HOBBS, for show Dahlia *Muriel Hobbs*, clear, soft yellow, of fine shape and centre. To Mr. S. MORTIMER, for Cactus Dahlia *E. J. Deal*, clear, bright scarlet—very fine. To Mr. G. HUMPHRIES, for Cactus Dahlia *Andie Turner*, orange-red, with a pale cerise shading. To Mr. J. T. WEST, for Cactus Dahlia *Island Queen*, a ft lilac-mauve—very distinct and pleasing; and to Pompon Dahlia *Nellie Broomhead*, soft lilac, of fine shape. To Mr. T. W. FELLOWES, for show Dahlia *Mrs. William Fellowes*, yellow ground, heavily suffused with orange-red, fine petal and shape; and to Mr. GEO. ST. PIERRE HARRIS, for show Dahlia *Harbinger*, soft pinkish-rose—a very attractive shade.

MISCELLANEOUS EXHIBITS.

Messrs. H. CANNELL & Co., Swanley, made a fine display of Dahlia blooms, and a few other flowers. Dahlias were shown by Messrs. CARTER, PAGE & Co., London Wall, and Mr. T. S. WARE, Hale Farm Nurseries, near Tottenham,

and Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood.

Autumn Roses made an exhibit of some dimensions from Messrs. W. PAUL & SONS, Waltham Cross, Herts. Many of the newer varieties were included, such as Queen Mab, Empress Alexandra of Russia, Waltham Standard, H.P., Enchantress, &c. These varieties appear to afford a considerable amount of bloom during August and September.

Messrs. JNO. LAING & SON, Forest Hill, London, S.E., had a group of plants displaying their Begonias, Caladiums, and Gloxinias. Messrs. A. W. YOUNG & Co., Stevenage Nurseries, showed blooms of Asters, Lilies, and other border plants; and Mr. CHARLTON, Tunbridge Wells, exhibited a group of lard flowers.

NATIONAL CHRYSANTHEMUM.

SEPTEMBER 7, 8, 9.—The usual September show of this Society was held in the Royal Aquarium, Westminster, on the above dates. There was the customary display of Dahlias and Gladioli, but not many Chrysanthemums. Apart from varieties of Madame C. Desgranges, there was scarcely a large-flowered Chrysanthemum well represented in the few competitive classes, which were easily accommodated upon one table. Chrysanthemum plants in flower were commendably shown by Mr. J. H. WITTY, Nunhead Cemetery, and H. J. JONES, Ryecroft Nursery, Lewisham. If Chrysanthemums were unusually attractive, the show of Dahlias and Gladioli left nothing to be desired in the matter of display. Both flowers were well shown. Messrs. J. BURRELL & Co., Howe House Nurseries, Cambridge, with a magnificent collection of varieties, took 1st prize for a collection of Gladioli, and a much smaller exhibit of a similar character was made by Messrs. HARKNESS & SOX, Bedale, Yorkshire.

CHRYSANTHEMUMS.—The first class calls for twenty-four bunches of Chrysanthemums in eighteen varieties, but there was only one exhibitor, viz., Mr. ERIC F. SUCH, nurseryman, Maidentoad. The well-known early-flowering varieties constituted this collection, and we did not notice any new one that calls for remark.

The best twelve blooms of Madame C. Desgranges were shown by Mr. B. CALVERT, gr. to Col. A. HOEBLON, Hallingbury Place, Bishop's Stortford, who had very good blooms of this variety. Little inferior, however, was a dozen from Mr. CHAS. CROOKS, gr. to the Dowager Lady HINDLE, Hudson House, Droitwich; and a third exhibit was staged by Mr. W. PERRIN, gr. to C. W. RICHARDSON, Esq., Fairgreen House, Sawbridge-gate.

Mr. CALVERT took 1st prize for the best twelve blooms or a large-flowering variety other than Madame Desgranges, showing very fine blooms of the yellow-flowering sport *George Wernig*. Extra prizes were given to Mr. W. J. GODFREY, Exmouth Nurseries, and Mr. JAS. AGATE, Havant, both of whom showed twelve blooms, which included several mid-season varieties being contrary to schedule. Emily Silsbury, Queen of the Earlies, and Barbara Forbes, were good in Mr. GODFREY's stand.

The best twelve bunches of Pompons were from Mr. E. F. SUCH; and Miss DEBENHAM, St. Peters, St. Albans, was 2nd. Mr. B. CALVERT had 1st prize for the best six bunches of any yellow variety of Madame C. Desgranges, staging, however, the two varieties *Geo. Wernig* and *Mrs. Hawkins*.

The only exhibitor of six blooms, distinct, who made a tolerable display was Mr. W. J. GODFREY. Emily Silsbury, Lady Father Smith, and Milano being the best varieties.

Miss DEBENHAM beat Mr. D. B. CRANE in a class for twelve bunches of Chrysanthemums.

Mr. B. CALVERT obtained a 1st prize for six blooms of any large-flowering variety, showing Madame C. Desgranges; Miss DEBENHAM was 2nd.

The best epergne of Chrysanthemum blooms was a satisfactory one from Mr. T. S. WILLIAMS, 4, Oxford Road, Ealing.

Of non-competitive exhibits of Chrysanthemums we noticed the following:—Mr. W. WELLS, Earlswood Nurseries, Redhill, furnished a table with bunches of Chrysanthemums of many varieties. The exhibit was remarkable for a really large flower of Madame Gustave Henry, a white-flowered Japanese variety. Mr. J. H. WITTY, Nunhead Cemetery, had an excellent group of plants in flower. For the season they were well flowered, and the group was nicely put up. Mr. H. J. JONES, Lewisham, showed a group of plants in flower, with a smaller group of Begonias at either end. The Chrysanthemums had interspersed among them a few plants of *Lilium sp. solum* album in flower, and the group generally was an exhibit of good taste.

Messrs. H. CANNELL & SONS, Swanley, put up a few bunches of Chrysanthemum blooms, with sprays of *C. perus-grass*; and Mr. NORMAN DAVIS, Framfield, Sussex, had a few varieties of Chrysanthemums, of which Queen of the Earlies, Harvest Home, and Mme. Desgranges appeared to be the best.

DAHLIAS.—We have already described the show of Dahlias as satisfactory, and our space will not permit us to note fully the competitive classes. Some of the principal of these were won as follows: For forty-eight blooms of Show and Fancy Dahlias in thirty-six varieties, Mr. JNO. WALKER, Thame, Oxon, was 1st; and for thirty-six blooms, distinct, Mr. S. MORTIMER, Rowlledge Nurseries, Parnham. Mr. S. HUMPHRIES, Kingston Langley, Chippenham, Wilts, was 1st for twenty-four blooms, distinct, in class 15; and for a similar number in class 17, THOS. HOBBS, Esq., Easton House, Easton, Bristol. Messrs. J. BURRELL & Co. had the best collection of eighteen bunches of Cactus

Dahlias; and Mr. J. T. WEST, Tower Hill, Br had best collection of twelve bunches.

Messrs. KEYNES, WILLIAMS & Co., Salisbury twenty-four bunches of Pompons, distinct; at BURRELL & Co. for twelve bunches.

The best twelve bunches of single-flowered from Mr. ERIC F. SUCH, Maidentoad; but F. STONE, Esq., Sunningdale, won the larger class for four bunches.

Among miscellaneous exhibits, Mr. E. F. SUCH number of Dahlia blooms and hardy flowers. Reid, Beckenham, furnished a table with flow of Cannas. Mr. M. V. SNAKE, Sevenoaks, exhib blooms; and Mr. JNO. GREEN, Norfolk Nurseries made one of the best displays with the same flower.

Mr. THOS. S. WARE, Hale Farm Nurseries, covered a considerable floor-space with a design large central cone of blooms, and smaller cones at A large number of Dahlia blooms were used in which created considerable display.

Apples and Pears were shown by Messrs. S. SONS, Hounslow.

ROYAL CALEDONIAN INTERNATIONAL CULTURAL.

SEPTEMBER 8, 9.—The autumn show of the donian Horticultural Society was held in the Market, Edinburgh, on the above dates. The show was in a flourishing condition. Its finances are good, increasing, and its influence among horticult north is becoming more and more general. This is being held as we go to press is the latest and success that attends the society's efforts.

It is very much with societies as with in stand still is to go back. No increase substantially decrease; and all horticulturists North and South hope that its approaching centenary may but its vigour and augment its vitality. No doubt the Jubilee has added to the prosperity of the show but those liberal prizes have hardly added score to the entries. The growth of the Society regular and steady national advance in horticulture.

To give some idea of the extent of the exhibit be stated that about 360 bunches of Grapes there were five fine fruit tables in one class, containing twenty-five dishes of fruit. There collections of eight dishes of fruit, six or twelve dishes of hardy fruits, four collections dishes of fruits grown in an orchard house, up Melons, nine dishes of Figs each containing t and fourteen dishes of Peaches, twelve fruits The entries were numerous in the classes for culinary Plums, and for Gages. There were s of Apples in the class for twelve varieties; and competition generally in the Apple classes, by lections and in the single dishes, was satisf being staged, at the most moderate calculation 3000 fruits.

The most popular varieties of Apples, as measured number of entries, are Lord Suffield, twenty-one; Castle, twenty-five; Ecklinville, sixteen; King of fourteen; Cox's Orange Pippin, twelve; Rib twelve; Keswick Codlin, fifteen; Irish Pear Warner's King, twelve; Hawthorned, eleven Pearmain, nine; Lane's Prince Albert, nine; Peasgood's, eight; Pott's Seedling, nine; Th nine; Oslin Pippin, eight.

The entries for a single dish of Pears, of six numbered 136, making a total of 514 single fruit alone—not bad for the capricious crop of the ye figures do not include the collections of Pear varieties, four of each, for which there were petitors; and the collection of Pears grown in 1 varieties, four of each. The Jargonelle still hold the most popular Pear, with fourteen entries; V Chretien, 11; Marie Louise, 11; Louise Bonne o Beurre d'Amanlis, 8; Doyenné du Comice, 6; Souvenir du Congrès, 5. There were 20 dish berri s, 19 of Cherries, 16 of red Currants, 9 o black, 7 of Raspberries, and 4 of strawberri-s.

The nurserymen's classes, such as Dobbie's Lane's, Todd's, the specimen Ferns and flowe the enormous masses of herbaceous plants, fi Begonias, were the most noticeable objects.

The specimen Conifers and Palms also did e furnish the spacious floors of the Waverley Mark

Pelargoniums, Fuchsias, stove and greenh Violas, Gladioli and Hollyhocks, were superbly

A pretty collection of Water-Lilies, as grown air, was shown by Mr. HUNSON of Gunnersbury, much interest. Some of the finer varieties we Marilacea carnea, aurora, sulphurea, tuberos Robinsiana, the last-named a very pretty crimson colour, and small, &c. Altogether, twenty-one varieties.

ROSES made a first rate display. Messrs. CRO HARKNESS, and others, showing as good blo have exhibited this season, the Messrs. CROLI ing the boards in the nurserymen's class, takin following classes:—Thirty-six, twenty-four, eigh and for twenty-four and twelve Pears. Also 1st fo

following:—Twelve Roses of one sort—a most brilliant display. Dozens of other sorts were also shown in perfect condition, making a fine collection in themselves, and securing 1st prizes in every class.

The choicest blooms among the different stands were perfect examples of the following:—Marie Van Houtte, Madame Hoste, Medes, The Bride, Innocente Pirola, Maréchal Niel, Souvenir de S. A. Prince, Captain Hayward, Prince Arthur, A. K. Williams, Susanne Rodocanachi, La France, and the dozens of single sorts were all good alike.

Mr. CROCKER, of Dundee, THOS. SMITH & SONS, Stranraer, and Messrs. HUGH DICKSON & SONS, of Belfast, were winners of several 2nds in various classes; Mr. CROCKER's 1st, however, for a dozen of Chas. Lefebvre, were magnificent blooms.

PRIZE LIST—FRUIT.

Collection of twelve dishes of fruit, 1st prize, J. HUNTER, Lambton Castle; 2nd, F. HARRIS, Elnor Castle, Ledbury; 3rd, J. W. McHARTIE, Strathfieldsaye.

Collection of eight dishes of fruit, 1st, F. HARRIS; 2nd, D. KIDD, Musselburgh; 3rd, RICHARD CAIRNS, Balrudeary, Dundee.

Collection of twelve dishes of hardy fruit, 1st, J. DAY; 2nd, J. NICHOLSON, Essex; 3rd, T. H. COOK.

Collection of twelve dishes of fruit grown in an orchard-house, 1st, J. HUNTER; 2nd, JAS. GIBSON, Chiswick; 3rd, W. WILLIAMSON, Tarvit.

Six bunches of Grapes, in three varieties, 1st, T. LUNT; 2nd, R. CAIRNS; 3rd, J. LESLIE.

Four bunches of Grapes, distinct varieties, 1st, D. KIDD; 2nd, Messrs. BUCHANAN, Forth Vineyards; 3rd, D. AIRDRIE.

Two bunches of Muscat of Alexandria, 1st, D. KIDD; 2nd, R. CAIRNS; 3rd, W. RUTHERFORD.

Two bunches of Black Hamburg, 1st, J. MATHIAS; 2nd, J. MENZIES; 3rd, T. SUTHERLAND.

One bunch of Muscat of Alexandria, 1st, P. MACDONALD; 2nd, D. KIDD.

One bunch of Black Hamburg, 1st, J. MENZIES; 2nd, PATTERSON.

One bunch of Alicante, 1st, P. HUNT; 2nd, Messrs. MURRAY & SONS.

One bunch of Alnwick Seedling, 1st, A. HUTTON; 2nd, T. LUNT.

One bunch of Gros Colmar, 1st, D. MACPHERSON; 2nd, W. MURRAY & SONS.

One bunch of Lady Downes, 1st, D. AIRDRIE; 2nd, J. DAY.

One Queen Pine-apple, 1st, D. KIDD; 2nd, D. MURRAY.

One Pine, other variety, 1st, M. MALOJUM McINTYRE, Glen.

One Melon, green-headed, 1st, A. RICHARDSON, Craig Park; 2nd, J. WALSH, Dollar.

One Melon, scarlet-headed, 1st, A. RICHARDSON; 2nd, J. RAMAGE.

Twelve Figs, 1st, J. MORRISON; 2nd, M. McINTYRE.

Twelve Peaches, 1st, F. HARRIS; 2nd, JAS. COSAR.

Twelve Nectarines, 1st, T. LUNT; 2nd, J. MORRISON.

Twelve Apricots, 1st, D. MACKAY; 2nd, Wm. LAING.

Twelve Plums, Gages, 1st, W. LAING; 2nd, F. HARRIS.

Twelve Yellow Plums, not Gages, 1st, J. HARPER, Jersey; 2nd, F. HARRIS; 3rd, THOS. BOWMAN.

Twelve Red or Purple Plums, 1st, J. HARPER; 2nd, F. HARRIS.

Collection of Dessert Plums, four varieties, 1st, J. DAY; 2nd, THOS. BOWMAN.

Collection of Culinary Plums, four varieties, 1st, J. HARPER; 2nd, J. DAY.

Collection of Apples, two varieties, ripe or unripe, 1st, JAS. GIBSON; 2nd, J. F. McLEOD.

Collection of Apples, grown in Scotland, twelve varieties, 1st, J. DAY; 2nd, D. MURRAY.

Collection of Apples, six varieties, 1st, J. CAIRNS; 2nd, Wm. LAING.

Six dessert Apples, no two varieties, 1st, JAS. GIBSON; 2nd, J. HARPER.

Collection of Pears, twelve varieties, four of each, ripe or unripe, 1st, J. HARPER; 2nd, JAMES GIBSON.

Collection of Pears grown in Scotland, six varieties, four of each, 1st, D. MURRAY; 2nd, T. H. COOK, Gosford.

THE VICTORIAN ERA CLASSES

Were so named in commemoration of the Diamond Jubilee of Her Majesty the Queen, and because the Council of this society desired to bring prominently before the public the remarkable advance made in the leading branches of horticulture during the Queen's reign, as exemplified in the best produce of British horticulture at the present time. The Council therefore hopefully anticipated that this competition would be a noteworthy one, and that the exhibits displayed would form a record in the history of British gardening. In the 1st class the prizes amounted to thirty-nine guineas, with a 1st prize of twenty guineas, a 2nd of twelve, and a 3rd of seven guineas. The class was for a table of fruit 20 feet long by 4 feet 6 inches wide, tastefully decorated for dessert.

The Veitch Memorial Silver Medal was awarded with the 1st prize, the Society's Diamond Victoria Silver Medal with the 2nd, and the Society's Jubilee Bronze Medal with the 3rd. Five competitors entered the lists, and it is only needful to name the exhibitors to note the nature of the struggle between them: Mr. J. HUNTER, Lambton Castle Gardens, who took 1st prize; RICHARD CAIRNS, Balrudeary House Gardens, Dundee, who was 2nd; ALEXANDER KIRK, Norwood, Alloa, 3rd.

Prizes of equal value (thirty-nine guineas) in money, accompanied with similar medals, were awarded to the best group of plants tastefully arranged on a space not exceeding 300 square feet of the floor of the Hall.

There were only three competitors:—JOHN McINTYRE, Woodside Gardens, Darlington, who took 1st prize; Mr. McINTYRE, the Glen Gardens, Innerleithen, 2nd; Mr. JOHN DOWNIE, Edinburgh, 3rd.

For cut flowers in class 3 the prizes were a 1st of ten guineas, a 2nd of seven guineas, and a 3rd of four, with accompanying medals for the best and most artistically-arranged table, 15 feet long by 5 feet wide, of cut flowers, hardy plants, and half-hardy annuals grown in the open air. Each bunch was formed of one variety, set up in vases or other suitable receptacles with their own foliage, no other to be used, and no plants in pots to be set upon the table. There were five entries in this class, the tables made a fine display; but it surely must have been an accident that Roses were excluded from the cut-flower tables with Dahlias, Chrysanthemums, Pelargoniums, and other tender plants and flowers. Messrs. HARKNESS & SONS, Bedale, were 1st; Mr. JAMES COCKER, Aberdeen, 2nd; and Mr. JAS. FORBES, 3rd.

Class 4, called for a table of vegetables 12 feet by 5 feet wide, tastefully arranged, consisting of twenty-five dishes, and not fewer than sixteen kinds, and not more than two dishes of two distinct varieties of any one kind. The same money prizes and medals were awarded as for cut flowers, viz., ten guineas, seven guineas, four guineas, with medals and cash. It is almost a new departure in showing vegetables to ask and provide space for their neat, tasteful, and effective arrangement, but no decorations—plants, flowers, or foliage—were used, but pot or sweet herbs, the foliage or sprays of culinary vegetables, green moss or a suitable cloth.—Open to Gardeners and Amateurs (four entries). JAMES GIBSON, Drumhwa, 1st; ROBERT R. RAE, Drumlan, Roxburg, 2nd; WILLIAM HARPER, Tullibet House Gardens, Perth, 3rd.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (−) the Mean for the week ending September 4.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 3, 1897.	Below 42° difference from Mean since January 3, 1897.				
0	1	74	0	+ 198	− 8	4	151	26.5	20
1	2	74	0	+ 64	+ 12	5	130	30.9	26
2	1	95	0	+ 152	− 78	15	127	17.2	30
3	2	102	0	+ 236	− 124	5	128	15.8	47
4	3	88	0	+ 186	− 118	12	125	19.6	35
5	2	111	0	+ 278	− 180	6	115	19.2	46
6	2	79	0	+ 122	− 20	16	152	29.8	26
7	3	90	0	+ 195	− 92	17	143	25.6	33
8	3	95	0	+ 277	− 138	17	147	29.6	44
9	3	79	0	+ 55	+ 8	14	162	29.0	32
10	3	88	0	+ 171	− 57	12	155	30.7	35
* 2	1	118	0	+ 348	− 80	6	155	24.0	46

The districts indicated by number in the first column are the following:—

- 1, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S.
- Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W. 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending September 4, is furnished from the Meteorological Office:—

"The weather was again in a very unsettled, rainy condition, but with some fine intervals, the latter being most marked in the southern and south-eastern districts. Thunder

and lightning occurred in many parts of England during the latter part of the period.

"The temperature was below the mean in all districts, the deficit ranging from 1° in 'Scotland, N.' and 'England, N.E.' to 5° in most of the western districts and in the 'Midland Counties.' The highest of the maxima were registered on August 30, and ranged from 73° in 'England, E.' to 65° in Ireland, and 68° in 'Scotland, W.' The lowest of the minima, which were recorded on September 4, ranged from 31° in 'Scotland, E.' (at Braemar), and 34° in 'Scotland, N.' to 41° in 'England, N.W.' and to 49° in the 'Channel Islands.'

"The rainfall was greatly in excess of the mean; in 'England, N.E.' the fall was as much as four times the normal, and in nearly all other parts of the kingdom two or three times.

"The bright sunshine was less than the mean in most districts, but slightly exceeded it in 'England, S. and E.' and over Ireland. The percentage of the possible duration ranged from 47 in 'England, E.' and 46 in 'England, S.' and the 'Channel Islands,' to between 26 and 30 in Scotland."

CONTINENTAL NOVELTIES.

A VARIEGATED-LEAVED SUNFLOWER.

SOME leaves, young, and also of full size, of a variegated dwarf form of *Helianthus annuus* reach us from Mr. F. Roemer, seed grower of Quedlinburg, which have a rather striking effect. The variegation consists of irregular patches of creamy-white on a green ground colour. The plant, if it come true from seed, might be of use in shrubberies and rough places in the garden.

NEW INVENTION.

A PLANT PROTECTOR.

WE have recently received a model of a very simple plant protector. An ordinary flower-pot is used, the interior is whitened, and the bottom sawn off in such a manner that two grooves remain. The pot being inverted, a piece of glass is fitted into the grooves, and is thus secured against disturbance from wind. It is proposed to use these protectors to place over delicate plants in spring, that may by such means be safely planted out in the open much earlier than the work is usually done, and the plants becoming established in their permanent positions, a longer season of bloom will ensue. It is urged that being made in different sizes, these protectors will be useful for placing over all sorts of delicate bedding plants, Potatoes, and many other things. It is probably intended for amateurs rather than professionals, though the latter may find such a cheap contrivance useful. A patent has been applied for by a Mr. H. Thompson.

MARKETS.

COVENT GARDEN, SEPTEMBER 9.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly very Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Dessert, in variety, p. bush.	8 0-10 0	Nectarines, selected fruit, per doz.	6 0-8 0
— Culinary, in variety, per bush.	3 6-5 0	— Medium, p. doz.	3 0-4 0
Blackberries, peak 3 0-4 0		— Seconda, p. doz.	1 6-2 0
Damsons, p. bush.	6 0	Nuts, Cobs, per lb.	0 3
Figs, per doz.	1 0-2 0	— Filberts, per lb.	0 2
Grapes, Gros Colmar, per lb.	1 6-2 0	Oranges, S. Australian, p. case, containing 120 fruit	10 0-12 0
— Gros Maroc, lb.	1 0-1 8	Peaches, selected fruits, per doz.	6 0-8 0
— Alicante, p. lb.	1 0-1 8	— Medium, p. doz.	2 6-3 0
— Hamburgs, selected, per lb.	1 0-1 6	— Seconda, per dozen	1 6-2 0
— 2nd quality, per lb.	1 0	Pears, various, per bush	4 0-10 0
— Muscats, "Canon Hall," p. lb.	4 0-5 0	— small, bush.	2 0-3 0
— Channel Islands, per lb.	0 7-0 9	Fine-apples, St. Michael, each	5 0-8
— Muscats, selected, per lb.	2 0-2 6	Plums, Greengage, per p. bush	9 0-10
— Muscats, 2nd quality, per lb.	0 9-1 8	— Victoria, per p. bush	5 0-6 0
Melons, each	0 9-1 0	— Ordinary, in variety, p. bush.	4 0-6
Mulberries, per gal.	1 6		

PLANTS IN POT.—AVERAGE WHOLESALE PRICES.		s. d. s. d.	
Adiantum, per doz.	4 0-12 0	Ficus elastica each	1 0-7 6
Aspidistra, per doz.	12 0-30 0	Ficus, small, doz.	1 0-2 0
Asplenium, each	5 0-15 0	— various, doz.	5 0-12 0
Aster, various, per doz.	2 6-5 0	Foliage plants, doz.	12 0-35 0
Chrysanthemum, per doz.	5 0-9 0	Fuchsia, per doz.	4 0-6 0
— single, or large plants, ea.	1 6-2 6	Heliotropes, dozen	3 0-4 0
Cholera, per doz.	2 0-4 0	Hydrangeas, per dozen	8 0-10 0
Dracumna, each	1 0-7 6	Lilium, various, per dozen	9 0-12 0
— various, p. doz.	12 0-24 0	Marguerites, p. doz.	6 0-9 0
Evergreen shrubs, in variety, doz.	6 0-24 0	Mignonette, p. doz.	4 0-6 0
		Palma, various, ea.	3 0-10 0
		— specimen, ea.	10 6-24 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.		s. d. s. d.	
Artichokes, Globe, per doz.	2 0 —	Mushrooms, out-door, 1-bushel	2 6-3 0
Beans, French, per bushel	1 6 —	Peas, per bushel	5 0-6 0
— Scarlet Runner, per bushel	1 6-2 0	Salad, small, per doz. punnets	1 6 —
Cucumbers, home-grown, select, per doz.	1 0-1 6	Shallots, per lb.	0 2 —
— 2nds, per dozen	0 9-1 0	Tomatoes, selected, per doz. lb.	2 6-3 0
Garlic, per lb.	0 2 —	— Medium, doz.	3 0-2 6
Mushrooms (indoor) per lb.	0 6 —	— Seconds, doz.	1 0-1 6
		— Channel Islands, per lb.	0 2-0 3

POTATOS.

Supplies are still rather light, and some descriptions have advanced a shade since last report. Ruling prices as follows:—Hebrons and Snowdrops, 70s. to 90s.; Giants, 70s. to 80s.; Blacklands, 60s. to 65s.—John Bath, 32 and 34, Wellington Street, Covent Garden, W.C.

SEEDS.

LONDON: Sept. 8.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that there were but few buyers on to-day's seed market. With respect to Trifolium, both supply and demand are now alike falling off. For Mustard and Rape seed there is a small inquiry on former terms. Choice new Winter Taroas are offering at tempting rates. Giant seed Rye is scarce and firm. Full prices are asked for Alayke and Trefoll. Hemp and Canary seed, without much business passing therein, are both very firmly held. Wisconsin Peas and Haricot Beans are 2s. higher. Californian Butter Beans meet with increasing favour at advancing quotations. Linseed is quiet.

FRUIT AND VEGETABLES.

GLASGOW: Sept. 8.—The following are the averages of the prices current here during the past week:—Pears, 3d. to 8d. per lb.; Apples, 4d. to 6d. do.; Plums, 4d. do.; Tomatoes, Guernsey, 3d. to 4d. do.; do., Scotch, 5d. to 7d. do.; Grapes, home, 1s. 6d. to 2s. do.; do., foreign, 6d. to 1s. do. Vegetables:—Golden Ball Turnips, 1s. 6d. to 2s. per doz. bunches; Cabbages, Scotch, 6d. to 8d. per dozen; Cauliflowers, Scotch, 1s. 3d. to 1s. 6d. per bunch; do., Dublin, 2s. 6d. do.; Parsnips, 5s. to 6s. per cwt.; herbs, assorted, 1d. to 2d. per bunch; Mint, green, 6d. do.; Onions, Dutch, 3s. 6d. to 4s. per bag; do., Portugal, 1s. per stone; Parsley, 9d. to 1s. do.; Potatoes, 8d. to 10d. do.; Carrots, 10d. to 1s. per dozen bunches; Peas, 5s. to 10s. per cwt.; Cucumbers, 4s. to 4s. 6d. per dozen; Lettuces, round, 6d. to 9d. do.; do., Cos, 6d. to 9d. do.; Radishes, 4d. to 6d. per dozen bunches; do., London, 1s. 6d. do.; Horseradish, 2s. 3d. to 2s. 6d. per bundle; Beans, Broad, 1s. per stone; do., French, 3s. 6d. to 4s. per sieve; Mushrooms, 1s. per lb.; Beetroot, 4d. to 5d. per bunch; Mustard-and-Cress, 3d. per punnet; Spinach, 2s. to 2s. 6d. per stone; Rhubarb, 1s. 6d. to 2s. per cwt.

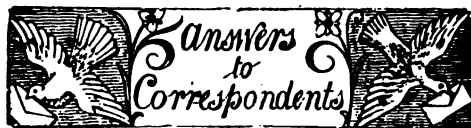
LIVERPOOL: Sept. 8.—Average of the prices at under-noted markets:—St. John's Potatoes, 1s. to 1s. 4d. per peck; Cucumbers, 3d. to 6d. each; Nectarines, 3d. to 4d. each; Peaches, 6d. each; Grapes, English, 1s. to 2s. 6d. per lb.; do. foreign, 4d. to 6d. do.; Pines, English, 5s. to 7s. each; do. foreign, 1s. do.; Mushrooms, 4d. to 6d. per lb. Birkenhead:

Potatoes, 10d. to 1s. peck; Cucumbers, 2d. to 6d. each; Grapes, English, 1s. 6d. to 3s. per lb.; do., foreign, 6d. to 8d. do.; Pines, English, 4s. 6d. to 7s. each; Peaches, 4d. each; Mushrooms, 4d. to 8d. per lb.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending September 4, and for the corresponding period of 1896, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1896.	1897.	Difference.
Wheat	23 1	33 7	+ 10 6
Barley	21 11	25 11	+ 4 0
Oats	19 11	17 6	+ 3 1



BOG AND AQUATIC PLANTS: *Enquirer*. Aponogeton distachyon, Butomus umbellatus, Calla palustris, Hottonia palustris, Lythrum roseum superbum and L. salicaria, Menyanthes trifoliata, M. nymphoides, Nuphar advena, N. lutea, Maris' Nymphaea, and others; Pontederia cordata, Villarsia nymphoides, Iris pseudo-acoris, and I. palustris.

BOOKS: X. Y. Z. *The Rose Garden*, by Mr. W. Paul (Kent & Co., 23, Paternoster Row); *Folklore of Plants*, by T. F. Thiselton Dyer (Chatto & Windus); and *The Book of the Rose*, by Rev. A. Foster-Melliar (Macmillan & Co.)

BUSHES AND TREES FOR MARGINS OF WATER: *Enquirer*. Hardy Rhododendrons, Pernettyas, Gaultheria Shallon, Cotoneasters various, Aralia spinosa, A. Sieboldi, Yucca gloriosa, Y. filamentosa, Y. flaccida, the more ornamental Alders, as A. glutinosa laciniata, A. cordata, &c., American Oaks, American red Cedar (Juniperus virginiana), Pinus strobus, Willows, Poplars, especially Populus canadensis, P. Abels, and P. tremula; Catalpa speciosa, and C. syriensis. For all of these plants special stations should be made by digging out the staple, and filling up with suitable mixture. Ferns, Rhododendrons, and American plants generally, like a soil in which peat or a fibry loam forms the chief part, together with a good proportion of sand. If the staple be of fair quality, a small quantity of new loam will make it good enough for most kinds of trees, but it should be trenched 3 spits, and lay exposed for an entire winter. All ground before it is fit to carry plants not naturally inhabitants of a marshy soil should be drained in some manner, and rubble drains are the best for such land, these being placed low enough to obtain a fall to the outlet, and yet drain the land 3 to 4 feet deep.

CORRECTION.—Mr. Henry Merryweather desires us to rectify "Wild Rose's" statement regarding the premier bloom of Niphetos Rose staged at the National Rose Society's show at Norwich, of which he was the exhibitor. See *Gardeners' Chronicle* for last week, p. 158.

COUCH-GRASS AND LILY BULB: W. T. The perforation of bulbs and tubers by the roots of Couch-grass is of common occurrence.

GRAPES CRACKING: *Perplexed*. The effect of much moisture having access to the border after a long period of drought, aggravated probably by undue denudation of foliage, and an over-moist atmosphere in the vinery, with insufficient ventilation.

NAMES OF FRUITS: G. C. A Codlin, evidently, perhaps Keswick; but fruit arrived in too poor a condition to determine.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number*.—J. A. Dendrobium chrysanthum.—R. W. P. 1, Amaryllis belladonna; 2, Eryngium amethystinum; 3, Heuchera glabra; 4, Pteris argyrea.—C. M. Rogers. Spiraea sorbifolia, the flowers are white, paniculate.—J. Smith. 1, Spiraea callosa; 2, Spiraea satifolia; 3, Spiraea Douglasii; 4, Diervilla floribunda.—G. F. Statice Gmelini.—John Clayton. Asclepias fruticosa.—G. H. S. 1, No specimen; 2, a garden variety of

Rose; 3, Atropa belladonna; 4, Pernet nata; 5, Silphium laciniatum; 6, S. aquatica; 7, Clethra alnifolia.

PLANTS FOR MARGINS OF WATER: *Enquirer* almost any species, New Zealand flax Donax, and the variegated form of it, scabra, Rhubarb, Hartstongue Fern, regalis, Polypodium vulgare in its varieties, Polystichum aculeatum, P. many forms; Woodwardia orientalis, L. tata, L. spinulosa, L. dilatata in shady montana in cool and damp ones. Ma Alpine plants so-called, if planted in w rockeries or parts of the bank that a efficiently, do and look well by the side &c.; if planted in big patches, viz., Campanula caespitosa, C. pulla, C. carpat binata, Dianthus alpinus, Gentiana: verna, Iberis corneifolia, Myosotis i Phlox Nelsoni, P. frondosa, P. subulata oeymoides.

PALM: J. Carter. I find no fungoid d's little white mould is superficial and as It seems impossible for a plant to liv roots compressed into a pot in this mai out soil or sustenance—that is quite account for anything. M. C. C.

PEAR TREE: J. M. When the leaves to any necessary pruning may be done wi that any injury will occur to the tre all redundant growth down to the old afterwards keep it under by early rem summer; and persistently keep the cen head clear of shoots. The best fruits (the spurs (not too long), and the termina old shoots. Do not carry out much w ing after your tree is brought into pr but rely upon two summer prunings, June, and late in July. Marie Louise long spurs, and a close inspection shoul when shortening these, that those termi fruit-bud are not cut off unless unduly l

ROSE-BUDDING OF DWARF STOCKS: F. T. the stem just below the ground-level is one.

"SETTING" THE FLOWERS OF CUCUMBER: The pollen should be employed for f about noon, and it should be taken fr that have been expanded about two hours it that you mean by word "ripe," that t had been open much longer than that useless for fertilising purposes, the pol fallen on the soil, or been eaten by bees,

SITUATION ABROAD: T. H. With your ac and foreign experience you should have n in filling an appointment. Advertise in *Tropical Agriculturist*, and this journal.

STRONG BRIAR-SHOOTS IN HEDGES: F. T. be budded without removal, taking then spring; but this job must be carefully d bud may die. Such Briars may also l trimmed at the roots, and potted in 32s in January grafted with Rose-shoots in ture of 58° to 69°. These will flower ur house treatment in April.

TOMATOES: J. W., Hampstead. The fruits ar by the "Black-spot" fungus, Clados copercioi, so often described and figur columns. Remove and burn at once t that is so affected.

COMMUNICATIONS RECEIVED.—A. G. Lydhard.—W. M.—Caldwell & Sons.—M. R. S.—J. D.—R. E. T.—W. C.—H. C.—T. L.—H. T.—F. De L J. S.—D. T. F.—W. F. & Co.—D. R. W.—E. Wild Rose.—D. Buchanan, Mackay, Queensland Davy, Berkely, California.—H. J. C.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the honor of announcing that the circulation of the *Chronicle* has, since the reduction in the price

MORE THAN DOUBLED, and that it continues to increase

Advertisers are reminded that the "*Chronicle*" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDEN-LOVERS at home, that it has a FOREIGN AND COLONIAL CIRCULATION, and is preserved for reference in all the principal Libr



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 18, 1897.

CAEN.

NOW that the London, Brighton & South Coast Railway Co. have established a line of small, but comfortable, steamers direct from Newhaven to Caen, horticulturists, botanists, and anybody else who has the opportunity, might easily do worse than take a trip to Normandy by this route. The boats are necessarily small because they have to go up a canal, some 9 miles long, from Onistreham (the name of which is strikingly suggestive of our Kentish town of Westerham) to Caen, but the sea-voyage of nearly 150 miles only occupies seven hours, and the fares are moderate itself.

This is not the place to dwell on the manifold interest of the ancient town of Caen to the student of history or of architecture. In these respects, the most competent of authorities, the late Professor Freeman, has compared it to Oxford. William the Conqueror and his queen lie buried here, each in a magnificent abbey-church of their own foundation—or rather Matilda still lies undisturbed, whilst the bones of the Conqueror have been scattered no man knows where; whilst, besides these two noble specimens of Norman architecture, there is at least one other church in the town, that of St. Pierre, worthy to rank with many of our English cathedrals. The castle, also founded by the Conqueror, and once garrisoned by 4000 English soldiers, still frowns over the town, with its deep though dry moat, its draw-bridges, and its machicolated gateway; crumbling, half-timbered houses in many of the streets recall Chester or old London, and at every turn dark entries, with round-headed stone arches or picturesque gables, offer attractions to artist or photographer. In the Hôtel de Ville is a by no means despicable library and picture gallery; but it is as the seat of a well-equipped University with three faculties (letters, medicine, and science), and of a small, but excellent, botanical garden, that Caen is most likely to interest readers of the *Gardeners' Chronicle*. The University possesses a natural history museum, containing the valuable ethnological collections of Dumont d'Urville, the great navigator, who was born in 1790 at the small manufacturing town of Condé sur Noireau, some thirty miles south of Caen. In France they appreciate the honour due to men of science: and in Caen, besides a Place Malherbe, named after the poet who was born there; and a statue of Auber the composer, also a native of the town; a street and statue commemorate Laplace the astronomer, and Elie de Beaumont the geologist, two illustrious natives of the department of Calvados, in which Caen is situated; a Rue Desmoneux and a Place Blot do honour to the founder and chief benefactor of the Botanical

Garden; and a Rue Pasteur bears a name which belongs to the whole world of science.

The Jardin des Plantes is on the outskirts of the town, approached by the Rue Desmoneux, and facing the Place Blot, and occupies rather high ground, sloping mainly towards the north-east. It is of irregular outline, about a quarter of a mile long, but less than half as wide, a considerable portion of its upper part being little more than a shrubbery, the trees in which are not labelled. The original garden, the foundation of Desmoneux, at the north end, is now devoted to propagating purposes, all the public portion of the present garden occupying the site of a quarry of the celebrated Caen stone, which was presented to the municipality by Dr. Frederic Blot, a physician of the town. On the grass slopes of the quondam quarry, there is now some effective bedding, in which Cannas, Begonias, and *Lobelia cardinalis* play the chief part. The good trusses of bloom on the *Pelargoniums* used for bedding-out, here, and in most of the cottage windows in the neighbourhood, are very noticeable.

In the centre of the garden is a fine block of houses, comprising a central hall and staircase, over which is the museum, herbarium, and small lecture-theatre; a small but lofty gable-topped temperate-house, and a more recently-added iron-framed, curved-roofed Palm-house, entirely covered with excellent, narrow-slatted Venetian blinds. Both houses at the time of my visit were at 25° C. (77° F.), but, except for its walls, which were nearly covered with *Heliotrope*, and a large specimen of *Yucca guatemalensis*, about 20 feet high, with a stem over a foot in diameter, the temperate-house was all but empty; a number of fine tall plants of *Mimosas*, *Eucalypti*, *Proteas*, *Benthamia*, *Araucaria*, *Chamærops*, &c., in tubs, being out-of-doors for the summer. In the Palm-house is a large Date-palm and a fine plant of *Pachira insignis* from Martinique, and, throughout the collection, as is only natural, and as is to a great extent the case with our own national collections, the colonies of the country were better represented than other foreign lands. I also noticed a good specimen of *Xylophylla arbuscula*, and one of *Euphorbia Hermentii* from the Gaboon. The plants in the houses are almost all labelled, the larger specimens bearing also the names of their donors. Below the level of the gravel terrace in front of the principal block is a range of seven good-sized "petites serres," partly underground, well-stocked with clean, well-grown plants; but without any arrangement and, considering the reputation of M. Angis—the late director and father of the present director—as an orchidist, very few Orchids. It should be mentioned, however, as an excuse for any shortcomings, that the gardens are under a not too lavish municipal control, and that M. Angis, with some fifteen men under him, is responsible for all the little gardens in the squares of the town. In the grounds a large Myrtle, *Cephalotaxus Fortunei* in full fruit; and several *Catalpas* covered with blossom, told of a mild climate. In the lowest and most sheltered part of the garden is the botanical garden proper, in which, in a space not larger than the student's garden at Kew, is a much more extensive series of hardy plants systematically arranged according to their Natural Orders. Here there were strikingly few gaps, and still fewer of those errors which so commonly arise from strong-growing self-sown usurpers. The white enamelled-iron labels with black lettering were only too

conspicuous, all of them being about 3 feet high; but the use of separate generic labels, the generic name not being repeated on the others, did not seem to facilitate study. One agreeable feature of this collection, on the other hand, is, that not only shrubs but trees, such as *Catalpa*, *Paulownia*, *Liriodendron*, *Magnolia acuminata*, and *M. macrophylla*, were in their proper places in the systematic sequence. Two small ponds afforded an insufficient representation of aquatic plants.

In the centre of the botanical garden is a commodious botanical institute, which, together with a marine laboratory at Luc-sur-Mer, a watering-place 14 miles from Caen, is under the control of the Faculty of Sciences of the University. The building is about the same size as the Jodrell Laboratory at Kew, and by the kindness of Dr. Léger, one of the botanical staff, who happened to be in residence, though the vacations had commenced, I was enabled to inspect all the arrangements. Besides small private studies for the professors, a small but sufficient reference library, in which Dr. Léger pointed out Bentham and Hooker's *Genera Plantarum* and the *Index Kewensis* as being in daily use; and a carpentry room, in which was a lathe for grinding sections of fossil plants; there was a roomy well-lighted dissecting-room, with lockers for each student containing a Hartnack microscope, with camera lucida, dissecting microscope, and re-agents. Students of two classes work here; from twenty to thirty at a time belonging to the Faculty of Medicine, and about half as many preparing for graduation in science.

The museum, over the central hall of the glasshouses, is small. It contained some sections of timber-trees grown in the gardens, some interesting colonial timbers, and a systematic collection of fruits and seeds; but its chief interest is the herbarium, which is chiefly that of Lenormand, but also includes a very valuable collection from New Caledonia, made, during a residence of fifteen years, by M. Vieillard, a navy surgeon. The Lenormand herbarium is very extensive, filling several rooms, and comprises cryptogams as well as flowering-plants. The latter are arranged according to De Candolle's *Prodromus*; but a very ingenious index to it has been prepared, based upon Durand's index to Bentham and Hooker. This consists of a small chest of drawers filled with cards, ordinal ones standing higher than the others, generic ones written on yellow card, and the species in each genus in alphabetical order.

CAEN FLOWER SHOW.

On the occasion of the annual race-meeting at the beginning of August, whilst the boating club organised a most picturesque and successful Venetian fête on the Orne, the Horticultural Society of Caen and Calvados held a three days' flower show in the Hôtel de Ville. On one evening of the show an excellent instrumental concert was given by a large military band. The number of competitors was not great, nor did the exhibition seem to have been sufficiently advertised, but the exhibits of the prize-winners were of so high a degree of excellence as to demonstrate that the florists of Caen fully understand their business. Amateurs were not well represented, nor, with the exception of some samples of the remarkable Louis Gauthier Strawberry, preserved in spirit, were fruit or vegetables at all prominent. Of this Strawberry I can only say, from what I saw, that its fruits reach a circumference of 9½ inches. Five of them are stated to have weighed 1½ lb..

and the variety has the additional valuable quality of bearing a second crop in August and September on the runners. It was produced by the gardener whose name it bears at the Château of Gronthéville, distant about 5 miles from Caen. The chief floral exhibits that attracted my attention were a group of Coleus (awarded a Gold Medal), exhibited by M. Marcel Lepage, 23, Rue des Marais, Caen; a group of very fine tuberous Begonias, effectively edged with *Linaria multi-punctata erecta* (Silver-gilt Medal), exhibited by M. Rouette of 88, Rue de Vancelles, Caen, who also obtained a Silver-gilt Medal for *Petunias*, and Bronze Medals for *Zinnias* and *Verbena*; a group of *Pelargoniums*, awarded a Gold Medal, was exhibited by M. A. Lenormand, 11, Rue St. Mauveur, Caen; another excellent group, awarded a Silver Medal, was exhibited by M. L. Davy, 200, Rue Caponière, Caen, who also obtained a Silver Medal for Coleus; and last, but not least, the collection of varieties of *Thalictrum glandulosum* exhibited by M. Léon Haretto, of 3, Rue Gémare, Caen. Two of these, novelties of 1896, "Nuits d'Orange," and "Nuit de Carnot," the one a lurid brown-yellow, the other a very deep crimson, are exceptionally fine. Certainly, the gardens of such cultivators as these gentlemen, would alone make the capital of Calvados well worth a visit. (H. H. Soudyger.)

BOOK NOTICE.

THE HAMBURG BOTANICAL GARDEN.

In connection with the remarkable Horticultural Exhibition now in progress at Hamburg, it may be of interest to allude to the Botanic Garden, long under the direction of our correspondent, Dr. Reichenbach. Dr. Voigt has, by authority of the educational officials of Hamburg, prepared a complete history of the botanical institute of that city, illustrated with reproductions of photographs of the principal points of view in the garden, the museum (interior and exterior), and some of its contents, besides plans and maps of the garden and museum in their past and present aspects.* Dr. Voigt has divided his book into two portions and an appendix. In the first section he traces the origin of the garden, and includes a biographical memoir of Dr. Johannes Flüge, to whose travels a collection of botanical specimens was due its foundation. Dr. Flüge died in 1816, his last days being embittered by the grief of seeing the garden upon which he had bestowed the work and zeal of a lifetime destroyed by the bombardment of the city by the French. The garden was not re-instated for nearly five years after this event, when Dr. Lehmann was appointed director. After his death, there was again an interregnum of some three years before Dr. Reichenbach was offered the vacant post. Under his régime, the area of the garden became greatly extended, the plant collections were re-arranged according to a more modern system of classification, and vast numbers of new specimens were purchased. The description of the present condition of the botanic garden occupies the third chapter of Dr. Voigt's book, and the second section is devoted to a notice of the earliest collections of botanical specimens that were made in Hamburg, and to that of the development of the museum, the original model being the similar institution at Kew. Although the question of founding such a museum had often been brought forward, no decided steps were taken in the matter till 1879, when Dr. Buck bequeathed his carpological collections to the State on condition that their custody should be entrusted to competent men in order that they might become of permanent value and be constantly added to and enlarged. They included seeds and fruits of

about 10,000 plants, brought together from all parts of the world. Dr. Binder's collection of Algae was acquired by the exertions of Dr. Sonder in the same year, and so rapidly did the specimens accumulate that they were amalgamated under the title of the Botanisches Museum in 1883. In 1894 the collections were removed to their present imposing and commodious quarters. Here are the herbaria, the collections of woods and seeds; the library, the work-rooms and laboratories, all of which are fully described in Dr. Voigt's book. The appendix is devoted to a list of the names of the officials connected with the Botanical Institute from the time of its foundation, the numbers of the species of every genus of plants grown in the garden at the present time, and many other details connected with the library, museum and laboratory.

WALNUTS, CHESTNUTS, AND ALMONDS.

In order to answer the many inquiries relating to the composition of Californian Nuts, and to the manures required to replace the exhaustion of the soil caused by their growth, Mr. G. E. Colby began the work of investigating samples of Walnuts, Chestnuts, and Almonds grown in various parts of California, each variety of Nut and its parts being considered separately. The physical analysis, the ash, nitrogen contents, and the kinds of fertilisers necessary to replace the soil ingredients taken away by the Nut crops are first considered; then the question of the composition of the kernels of the Nuts with reference to their food-values, is briefly dealt with.

WALNUTS.

Six varieties of Walnuts were examined of the growth of 1895; they were gathered from trees upwards of eight years old, grown in districts which well represent Walnut-producing localities. The Bijou Walnut is more of a curiosity than anything else, still it deserves the place given it.

The following table gives the results of the physical analysis, and the ash and nitrogen contents of the various parts of the Walnut:—

COMPOSITION OF CALIFORNIAN WALNUTS.

Constituents.	Variety—Soft-shell.			Bijou.	Native Black
	Orange County.	Los Angeles County.	Amador County.		
<i>Physical Analysis.</i>					
Entire fresh fruit:—					
Average weight of nuts grams*	13.30	15.80	13.30	31.00	14.10
Average weight of hulls	20.00	17.50	11.70	49.00	35.90
Total weight ..	33.30	33.30	25.00	80.00	50.00
Nuts, proper per cent.	40.00	47.50	45.00	37.50	30.00
Hulls	60.00	52.50	55.00	62.50	70.00
Fresh Nuts (hulled):—					
Average weight of kernels ..	6.00	6.65	5.10	8.34	3.75
Average weight of shells	7.30	9.15	8.20	22.66	10.35
Total weight ..	13.30	15.80	13.30	31.00	14.10
Kernels ... per cent.	45.00	42.10	38.30	26.90	25.90
Shells	55.00	57.90	61.70	73.10	74.10
<i>Ash and nitrogen.</i>					
Fresh nuts (hulled):—					
Ash per cent.	0.78	0.64	0.83	0.68	0.57
Nitrogen	1.00	1.00	1.08	0.81	0.98
Fresh kernels:—					
Ash... ..	1.16	1.05	1.18	1.36	1.26
Nitrogen	1.82	2.09	2.45	2.40	3.16
Fresh shells:—					
Ash... ..	0.61	0.35	0.62	0.41	0.30
Nitrogen	0.32	0.21	0.23	0.20	0.20
Fresh hulls:—					
Ash... ..	1.15	1.83	2.21	1.06	0.51
Nitrogen	0.11	0.28	0.17	0.15	0.12

* About 30 grams, an equivalent to 1 ounce.

The Bijou Walnut is very large, weighing 24 as an average, or more than twice the weight of ordinary Walnuts. While the hull is also quite different in percentage of the entire fruit, 62.5, is not much greater than that of the soft-shell, and less than that of the native black. The same is with regard to the proportion of shell in the nut, 73.1 per cent.

Between the three soft-shell varieties there are differences other than would naturally occur samples from different trees or localities.

average weights are, of nuts, 14.1 grams; hulls, grams; shells, 8.2 grams; and of kernels, 5.9 grams.

It is remarkable that the percentage of nitrogen the fresh nuts (hulled), and in the fresh kernel is much greater than is the percentage of ash. In the case of the native black variety the nitrogen the fresh kernels is nearly three times more than the amount of ash, and twice as much in the soft-shell varieties from Los Angeles and Amador counties.

CHESTNUTS.

Two samples of Californian Chestnuts were examined, both of the Italian variety, one grown Santa Paula, Ventura county, and the other Clinton, Amador county.

The following table gives the results of physical analysis, and shows also the ash and nitrogen contents, in the various parts of the Chestnut fruits.

COMPOSITION OF CALIFORNIAN CHESTNUTS.

Constituents.	Grown in Santa Paula.	Grown in Clinton.
<i>Physical Analysis.</i>		
Entire fresh Fruit:—		
Average weight of Nuts grams	28.50	21.1
Average weight of hulls	21.50	11.1
Total weight	50.00	32.2
Nuts per cent.	57.00	65.5
Hulls	43.00	35.5
Fresh Nuts (hulled):—		
Average weight of kernels, grams	24.08	18.1
Average weight of shells	4.42	3.1
Total weight	18.57	21.2
Kernels per cent.	84.50	84.5
Shells	15.50	15.5
<i>Ash and Nitrogen.</i>		
Fresh Nuts (hulled):—		
Ash per cent.	0.83	0.6
Nitrogen	1.02	0.6
Fresh Kernels:—		
Ash	0.75	0.6
Nitrogen	1.06	0.6
Fresh Shells:—		
Ash	0.99	0.6
Nitrogen	0.76	0.6
Fresh Hulls:—		
Ash	1.21	0.6
Nitrogen	0.50	0.6

Of the two samples of Chestnuts examined from Santa Paula is clearly the better, for it heavier nut and kernel, though the proportion of nut, with reference to the entire fruit, is greater than that from Clinton. The averages of the two taken as a possible average for Chestnuts in general are—hulls, 16.58 grams; nuts, 25.08 grams; 3.88 grams; and kernels, 21.21 grams.

ALMONDS.

Eleven samples of Almonds were examined, of light-weight, and four of heavy-weight. The from Davisville stands as the lightest of a varieties, viz., 5.2 grams, though its nut is somewhat heavier than that of King's soft-shell, 2.6 to 2.3 grams.

On the other hand, the Languedoc Almond heaviest of all, viz., 25 grams, though its nut is about like that of the light-weight varieties, 4.5 to 4.7 grams. The IXL Almond from Skyland, on the Santa mountain, has also a large hull, 4.4 grams; but it the largest nut of the lot, 7 grams, nearly times the weight of several of the others. The

* Die botanischen Institute der freien und Hansestadt Hamburg, von Dr. A. Voigt (Leopold Voss, Hamburg and 1897).

riety of the Foothill Station has a very heavy rasing 17 grams, and a nut as small as that ght-weight Ne Plus Ultra, viz., 3 grams; the on between the hulls and nut being greater h any other of the varieties. hus seen that, although an Almond fruit may and weighty as it comes from the tree, it by

Marie Dupreys, which ranks next to the Languedoc, the heaviest kernel of all.

NITROGEN CONTENT OF THE DIFFERENT FRUITS.

Referring again to the tables above, where the nitrogen is reported for nuts, kernels, shells, and hulls, it is seen that the average percentage for

closely with that mentioned for the Californian nuts. The difference in nitrogen in the kernels of the Pennsylvania and California Chestnuts is only a trifle.

The ash constituents, and the manurial requirements of the different trees, will be considered in a future article. *J. J. Willis, Harpenden.*

CODONOPSIS OVATA.

THE first mention of this pretty species is in Dr. Forbes Royle's *Illustrations of the Botany of the Himalayan Mountains*, p. 258, which was published in 1839. A figure of the plant is also given under t. 69, but it cannot be said to agree very well with the accompanying illustration (fig. 58), which was made from a plant shown at the Royal Horticultural Society's meeting, Westminster, on June 23, 1896, by Mr. Amos Perry, of Winchmore Hill. *Codonopsis* (*Glossocomia*) *clematidea*, as figured at t. 167 of the *Gartenflora*, seems to be much nearer the plant here figured so far as habit is concerned, but the flowers do not agree with those of that specimen either in size or colour. The plant shown at the Drill Hall was from 12 to 18 inches high, and bore several more or less drooping flowers of a pale blue colour outside, distinctly veined, and with a conspicuous purple zone about one-third the length from the base, at a point where some of the flowers are somewhat constricted. Looking into the flower, one may notice two zones of purple, then one of yellow, and one of black at the base surrounding the ovary. The plant is a native of the Himalayas, but, unless there is considerable variation in the species, there seems to be a doubt as to whether that here figured is really *Codonopsis ovata* or some other species not yet described. *John Weathers, R.H.S., London.*

NOTES ON THE CULTIVATED BRASSICAS.

IN common with nearly all cultivated plants, especially those which are perplexing, the Brassicas have recived too little attention from botanists. The inevitable outcome of such neglect or of any superficial study is a reduction of species, and in this direction Brassica has suffered greatly. It is usually confusing to reduce types. The most perplexing species in our manuals are those which contain the greatest number of old types or synonymous names. It is true that this is supposed to be primarily due to the variation of the species or groups, but I am convinced that it is often to be charged to superficial study or insufficient material. The conviction is growing upon me that our manuals contain too few rather than too many species; at all events, the miscellaneous dumping of *Rutabagas*, *Turnips*, *Rape* and other plants into *Brassica campestris* is unnatural, and therefore unfortunate. The best presentation of the species of true Brassicas which has yet been made is that of De Candolle's *Prodromus* so long ago as 1824, and my own studies lead me to adopt essentially those conclusions. I am not clear as to the generic merits of *Brassica* and *Sinapis*. If we are to erect generic characters upon general habit, the two might be kept apart, but I have not found structural characters with which to separate them, and for the purposes of this discussion I have kept them together. I should add, that I am acquainted with no group in which many of the difficulties of classification vanish more quickly upon a study of the growing plants than in these Brassicas. From my standpoint, the group may be divided as follows:—

a. Whole plant glaucous-blue when in flower; leaves of the flower-stems clasping; flowers various.

I. Leaves from the first more or less fleshy throughout, and glaucous-blue, even when young; flowers large and creamy-yellow, the petals conspicuously long-clawed, and the sepals usually erect.

1. *Brassica oleracea*, Linn., the Cabbage and Cauliflower tribe. Leaves smooth from the first, and the root never tuberous.
2. *B. Napus*, Linn., the Rape. Leaves smooth from the first, differing from *B. oleracea*



FIG. 58.—CODONOPSIS OVATA.
(Exterior of flowers pale blue, with purple zone.)

ns follows that the nut is also large, and, he cleaned product from a tree bearing such it is proportionately greater, it may not be ofitable than that from small-sized fruits. amining the results as to the proportion the kernel and the shell, it is found that the kernels are with the heavy-weight varieties, e exception of Drake's Seedling, which falls some of the light-weight Almonds; and the

hulled nuts stands thus:—Walnuts, 1.02 per cent.; Almonds, 1.64 per cent.; Chestnut, 0.80 per cent. of nitrogen. The largest part of this is contained in the kernel, as that in the shell of the Walnut is but one-sixth, that in the Almond-shell one-twelfth, and that of the Chestnut-shell one-tenth of the whole nitrogen of the hulled nut.

Comparing this with the European data we have, we find that the European nitrogen-content agrees

chiefly in habit, and more deeply scalloped leaves. The botanical position of the Rapese is open to doubt.

3. *B. campestris*, Linn., the Ruta-baga. First leaves hairy, the root usually tuberous.

II. Leaves, except upon the flower-stem, thin and green; flowers smaller and bright yellow, less prominently clawed.

- a. Plant potentially biennial (that is, the root hard and thickened, often distinctly tuberous); foliage firm in texture.

* Leaves distinctly hairy.

4. *B. Rapa*, Linn., the common Turnip. Leaves, prominently lyrate or interrupted below, the root tuberous.

** Leaves not hairy.

5. *B. chinensis*, Linn., the Pak-Choi Cabbage. Radical leaves wavy and ample, glossy green, obovate or round, obovate in general outline, either entire or obscurely wavy or even crenate, tapering to a distinct and thick strong petiole, which is generally not prominently margined; pod large and tapering into a beak half an inch long; root sometimes tuberous.

6. *B. napiformis*, Bailey (Bull. 67, Cornell, 1894), the tuberous-rooted Chinese Mustard. Radical leaves comparatively few, the blade thin and oval in outline, and on long and slender, slightly-feathered petioles, sharply and irregularly toothed, with a thin bloom; beak of the pod more abrupt; root distinctly hard and tuberous.

aa. Plant truly annual; foliage profuse, loose and soft.

7. *B. Pe-Tsai*, Bailey, l.c., the Pe-Tsai Cabbage. Numerous radical leaves, large and light green, oblong or ovate-oblong, crinkled and very veiny, and the margins wavy, contracted into a flat and ribbed petiole 1 to 3 inches wide, which is provided with a wide thin-notched or wavy wing; stem-leaves sessile, and clasping; pod of medium size, with a short cone-like beak; the leaves tend to form an oblong, loose head, like *Cos* Lettuce.

8. *B. japonica*, Sieb., the Californian Pepper-grass, Pot-herb Mustard. Rather numerous radical leaves, oblong or oblong-obovate, the margins either crisped or cut into many very fine divisions, the petiole distinct at its lower end; stem-leaves all petioled; pod very small, with a slender beak; the soft, thin leaves make excellent "greens."

- b. Plant green or but slightly glaucous when in flower; leaves on the flower-stems not prominently clasping; flowers small and yellow. (Essentially *Sinapis*.)

9. *B. juncea*, Cosson, the Chinese Mustard.

10. *B. nigra*, Koch, common Mustard of commerce.

11. *B. alba*, Boissier, white Mustard.

The most important innovations in this classification are the recognition of the peculiarities of the stem-leaves and the sizes and colours of the flowers; and it is to be noticed that the Ruta-baga and Turnip, which are ordinarily thrown together, fall into different categories. The differences between the Cabbage-like species and Turnip-like species in size and colour of flowers is really striking when the plants are flowered side by side. The Turnip-flower is more like that of Mustard than like that of the Cabbage tribes. The breaking up of the Oriental Cabbage tribe into the three species (*B. chinensis* proper, *B. napiformis*, and *B. Pe-Tsai*) is also an innovation, but I am unable to understand the plants in any other arrangement.

The point which I wish to urge particularly at this time is the specific distinctness of the Ruta-baga and Turnip, and I will contrast them more minutely. The tubers of the two are different in season, texture, and flavour. In the Ruta-baga the small leaves immediately following the seed-leaves are sparsely hairy, but all subsequent leaves are entirely smooth, densely glaucous-blue, thick, and Cabbage-like, with a fleshy petiole and midrib. In the Turnip the radical leaves are always more or less hairy, and they

are green and Radish-like, thin, with slender petiole and the leaves are much more lyrate, with interrupted leaflets on the petiole; the small leaves following the seed-leaves are also thinner and narrower, and more deeply scalloped. In the Ruta-baga the flowers are large, creamy, and Cabbage-like, while in the Turnip they are small, yellow, and Mustard-like, with shorter claws and more spreading calyx. The Turnips vary in hairiness, but the cone of expanding leaves, or the "heart-leaves," always shows the hairs distinctly, while the heart-leaves of the Ruta-bagas are entirely smooth, fleshy, and remind one of the young shoots of Seakale. I have grown most of the trade varieties of Ruta-bagas and Turnips, and they may be referred to their respective species as follows. Specimens are in the Cornell Herbarium.

Ruta-Bagas (*Brassica campestris*).—1, Bronze-top Swede; 2, Burpee's Breadstone; 3, Carter's Ruta-baga; 4, Carter's Imperial Hardy Swede; 5, Colson's West Norfolk; 6, Early White Vienna; 7, Improved American Purple-top Ruta-baga; 8, Improved Champion; 9, Improved Yellow Summer Turnip; 10, Improved Yellow Swedish; 11, Laing's Improved; 12, Lincolnshire Improved; 13, Long Island Improved Purple; 14, Long White French Turnip; 15, Shamrock; 16, Skirving's; 17, Sutton's Champion; 18, Taunton; 19, White Ruta-baga; 20, White Swede or Russian; 21, Yellow French.

Turnips (*Brassica Rapa*).—1, Aberdeen; 2, Black Stone; 3, Cow-horn; 4, Early Dutch Turnip; 5, Early Snowball; 6, Extra Early Milan Red-top Strap-leaf; 7, Extra Early Purple-top Munich; 8, German Teltow; 9, Green Barrel; 10, Green Globe; 11, Grey Stone; 12, Long White Tankard; 13, Montmagny; 14, New Golden Finland; 15, Pomeranian White Globe; 16, Purple-top Strap-leaf; 17, Purple-top White Globe; 18, Red-top Globe-shaped; 19, Red-top Strap-leaf; 20, Robson's Golden Ball; 21, Seven-top; 22, Teltow, or Small Berlin; 23, True Jersey Navet; 24, White Egg; 25, White Flat, or Globe; 26, White Model; 27, White Norfolk; 28, White Strap-leaf; 29, Yellow Aberdeen; 30, Yellow Globe; 31, Yellow Malta; 32, Yellow Stone.

Brassica oleracea must be held to include, I think, all the Cabbages, Kales or Borecoles, Collards, Brussels Sprouts, and Cauliflower and Broccoli; and most botanists appear to agree that the Kohl-rabi belongs here, but upon this point I am not fully satisfied. So far as I know, *B. oleracea* is the most variable species in cultivation in temperate climates, although Naudin would give this distinction to *Cucurbita Pepo*. But the *Brassica* varies immensely in nearly all its parts, while the important variations of the *Cucurbita* are confined to the fruit and length of bine. There are few plants in which contemporary evolution can be so well studied as in this *Brassica*.

The Chinese Cabbages, which are now coming into cultivation, possess unusual interest to both the horticulturist and botanist. They are not only exceedingly variable, but the variations are of such a character as to show very clearly what has been the genetic history of the garden forms. The species is now represented in cultivation by several widely different forms. Hemsley refers the Chinese Cabbages to *Brassica campestris*, but they really have little in common with that much-abused species.

The confusion into which our Brassicas have fallen is in some measure due to the different vernacular names which they bear in different countries. The French use the word *chou* generically to include all forms of *B. oleracea*, and the Ruta-baga, that is, all the blue thick-leaved Brassicas; while in England the Ruta-baga is called the Swedish Turnip. A tabular view of the different vernaculars may prove to be useful:—

French.	English.	American.
<i>Chou Cabus</i>	Cabbage	Cabbage
<i>Chou de Milan</i>	Savoy	Savoy Cabbage
<i>Chou à Grosse côtes</i>	Portugal Cabbage	Portugal Cabbage
<i>Chou de Bruxelles</i>	Brussels Sprouts	Brussels Sprouts
<i>Choux-verts</i>	Borecole or Kale	Borecole or Kale
<i>Chou-rave</i>	Turnip-Cabbage or Kohl-rabi	Kohl-rabi
	Turnip-rooted Cabbage or Swedish Turnip	Ruta-baga
<i>Chou navet</i>	Turnip	
<i>Chou-fleur</i>	Cauliflower	Cauliflower
<i>Navet, or Chou-navet</i>	Turnip	Turnip

L. H. Bailey, in "Garden and Forest."

EASTERN AND WESTERN LILIES.

THE Lilies of Asia and America, in addition to their capability of floral impressiveness, have this valuable qualification—that the grandest of these bloom between the first and the second efflorescence of the Rose. This is an admirable arrangement for our gardens, and we do not greatly mourn the temporary absence of their greatest rival, while the imperial Lilies of Japan, of California, of India, and of Levantine regions are in splendid bloom. The earliest Lily and the latest—*Dahuricum* and *speciosum*—are, however, beautiful contemporaries of the Rose. The former flowers in the beginning of July, often as early as the third week of June; it belongs to the sub-genus *Isolirion*, its finest varieties being *D. erectum* and *D. incomparabile*, of which the latter, which increases rapidly, creates in my garden magnificent effects. With *Lilium speciosum*, on the other hand, the season of flowering is, as I have indicated, the latest of all; it is the peculiar glory of September and October, at which period it is undoubtedly, by reason of its beauty and fragrance, the most attractive of autumnal flowers.

In Scotland, the reign of that queen of the garden *Lilium candidum*, begins usually, except in an abnormally warm season, about the middle of July; and there can be no question that when it is extensively and adequately cultivated, the effect of this Lily when in flower is unique. By many authorities, such as Mr. J. G. Baker of Kew, Sir Edwin Arnold, who has travelled much in the East, and Dr. Wallace of Colchester, it is conjectured that the words "even Solomon in all his glory was not arrayed like one of these" were suggested to the greatest of Teachers by the brilliant aspect of *Lilium chalcidonicum*, the scarlet Martagon; but as *Lilium candidum* is also a native of the Levant, and flowers with great freedom in the valleys of Palestine, it is equally possible that its beauty may have been the inspiration of one of the most touching and memorable utterances of the "Friend of Man."

The amateur cultivator who knows nothing, in most instances, of their nature or characteristics, will, in all probability, during the first flowering season after planting their bulbs, be intensely disappointed with the aspect of these; but if he will let them wisely alone till the following year, he will witness a vast improvement in their growth, which in succeeding seasons will be greatly increased. It is, indeed, a peculiarity of all the Martagons, including *L. dalmaticum* and *L. chalcidonicum*, that as a general rule they take several years for their full establishment; but as I can testify from long experience, they are all the more enduring by reason of this limitation, if such it may be called, in the light of its results. *L. Szovitzianum*, sometimes erroneously denominated "the Persian Lily" (though, as I have already explained, this special variety is of Caucasian extraction, see *Gardeners' Chronicle*, p. 320, September 19, 1896), is a supreme favourite of the Dean of Rochester, in whose antique garden it sometimes attains to a height of 8 feet. Here, my stateliest specimen was destroyed, or rather, broken off from the bulb by the wind in the month of June, before which my finest Dalmatian Martagon also gave way—likewise a fasciated form of *Lilium candidum* bearing upwards of 100 buds. Growing as they were, in strongly sheltered positions, and none storm of such violence having been anticipated, they had been, unfortunately, inadequately secured. But I have this consolation, that the uninjured bulbs remain with what may be entitled their floral potentialities.

The growth of *Lilium giganteum*, the great Himalayan Lily, is like that of the Martagons, exceedingly slow when it is grown from offsets, as to ensure its full stature it always ought to be. One of my *giganteum* has been growing steadily thus for at least three years, and I anticipate that my patient will be amply rewarded next season by its floral revelation, and the majestic height to which, under such conditions, it will certainly attain. Perhaps the most successful cultivator in Scotland of *Lilium*

giganteum is J. W. Osgood H. Mackenzie of Inverewe in Ross-shire, not far from Loch Maree, and he tells me he grows it entirely from offsets, the results of which natural method of culture are invariably impressive. He who grows it from bulbs generated elsewhere than in his own garden need not be surprised if its growth is limited; likewise, let me add, the number and dimensions of its flowers.

The characteristics of *Lilium auratum* are of a widely different character from those of *giganteum*, for a bulb of this Lily, if planted as late as the end of February, will make, in all probability, a successful effort to bloom the same year. But I think that this is the experience of cultivators of the "Golden-rayed Lily,"—that, when grown in this somewhat disrespectful manner, which is utterly unworthy of a true lover of flowers, it has a strong tendency to resent such treatment, and disdains to exhibit, when its flowering-period comes, its full capabilities. The probability also is, that if forced in this unnatural manner, the result will be deterioration and early decay. The Divine Art, which works in the realms of Nature in its highest operations, is deliberately slow. Its loftiest work is accomplished imperceptibly. We do not see our fairest flowers growing, we only know by observation that they have grown. Their silent yet realisable evolution is a mystery, and so, by reason of our mental limitations, it must evermore remain.

Much might be written regarding the fragrance of Lilies, which imparts to our gardens such a tropical atmosphere during the summer and autumn months. The perfume of such varieties as *L. auratum*, *L. longiflorum* Harrisii, and even *L. candidum*, is too powerful and oppressive for an ordinary conservatory; but it is not objectionable in the open air. On the contrary, when experienced under such mitigating conditions, it forms—especially in the case of *L. candidum*—no inconsiderable part of their attractiveness. But on the other hand, the exquisite odour emanating from *Lilium Browni*, *L. Krameri*, and the richly-dowered *L. speciosum*, requires no mitigation. This, independently of their distinguished beauty, gives them a fascination which is, even among Lilies, exceedingly rare. David R. Williamson, *Manse of Kirkmaiden, Wigtownshire, N.B.*

NURSERY NOTES.

MR. G. MOUNT'S NURSERY, CANTERBURY.

As an instance of successful nursery and market gardening, Mr. G. Mount, carrying on operations at Canterbury and Folkestone, is worthy of a note in these pages. The original establishment, called the Exotic Nursery, in St. Peter's Street, Canterbury, once carried on by the late W. Masters for many years, and subsequently by him in company with J. Kimmont, still exists as an appendage of the larger nursery at St. Dunstan's on the outskirts of the city; but it is too small in area and too much surrounded by houses and trees to serve any very useful purpose at the present day. At one time this small nursery was filled with hardy perennials, hardy Ferns, Phloxes, Carnations, Hollyhocks, &c.; the walls with climbing plants, and the glasshouse with a fine assortment of Azaleas, Camellias, and stove and greenhouse plants, and the best Orchids of the day, exotic Ferns, and Selaginellas. The chief use of this garden at the present day is the growing of flowering annuals and border flowers for the shop trade, and Carnations and Picotees. The old circular-shaped glasshouse, standing in the centre, and once surmounted with an expensive domed roof, now replaced with one of a less ornate character, was filled, at the time of our visit, with Palms, &c., for decorative purposes. One longed to clear away the whole stock of the place, houses and all, and remodel and plant it with a better class of material, building a light useful glasshouse or two for the display of popular flowering and foliage greenhouse and stove plants. Perhaps, in time, the present proprietor, who is certainly not lacking in enterprise, will see his way to do this.

At the St. Dunstan's branch all is modern—

long, span-roofed houses of simple construction, and provided with ample means of ventilation and heating, are grouped together in some numbers. Here Vines and Tea Roses in pots are grown to perfection, also Tea Roses planted out for the supply of cut flowers all through the season, and now, being rested by withholding water from the borders and affording the most ample ventilation, to be started later in the autumn for furnishing flowers at Christmas, when there is a lively demand for Roses, especially Teas. The varieties chiefly planted are Niphetos and Catherine Mermet. This Rose-house measures 20 feet in width by 100 feet in length, and the area is divided into a central bed, and a bed at each side, and the plants are mostly in bush form.

Two other span-roofed houses were remarked, 135 feet in length and 20 feet wide in each case, that were similarly planted with Rose Catherine Mermet.

A large span house was filled with Maidenhair Fern, shade being afforded by training Tomato-plants to the sash-bars—a remarkably healthy lot of plants, both of Ferns and Tomatoes. Tomatoes in the perfection of health and fruitfulness occupied two houses, respectively 130 feet by 27 feet, and 130 feet by 20 feet. The plants were planted out, as we thought, rather thickly, in the central and side-beds. The results, however, dissipated any doubts that we may have had in respect to the plants shading each other, and thus acting inimically on their flowering, for more fruitful plants could scarcely be found anywhere under entirely dissimilar treatment. The fatal "spot" disease of the fruit, *Cladosporium lycopersici*, seldom gave trouble; and equal freedom from the leaf and fruit disease, *Cladosporium fulvum* and the "sleepy" disease was, we were informed, enjoyed. The *laissez faire* of some cultivators does not hold here, timely precautions being taken by dressing the plants with the Bordeaux Mixture, and affording as much air day and night as is commensurate with fairly rapid growth; moreover, the syringe is not frequently employed, nor much root watering, but the happy medium aimed at between a too dry and a too moist condition of the soil. The variety is a selection of Perfection, and hundreds of mature fruits were seen which measured 14 to 15 inches in circumference. Several thousands of *Chrysanthemums* Lady Selborne, one of the best white flowered decorative varieties, the plants healthy and well-foliaged, were remarked. The blooms are for cutting. *Maréchal Niel* and other climbing varieties of the Rose, are grown in pots; besides bushes of Tea Roses, similarly grown, were to be observed standing outside in the full sunshine, in order to mature the shoots. The second flowering of these and of the Tea Roses in the open quarters, had been very abundant this season, and still gave promise of a plentiful crop should the weather prove propitious, and early frosts in this part of Kent are not usually of any great severity, so that the promise will probably be fulfilled.

The large stock of *Chrysanthemums* above-mentioned will be accommodated in those houses that are now filled with maturing crops of Tomatoes, the pot-Vines, pot-Roses, &c.

Some remarkable quarters of young Apple-trees, one and two years from the graft or bud, were observed weighed down with fruit. These consisted of that wonderful cropper, Bismarck, the coming Apple for market purposes, according to the belief of many nurserymen; Worcester Pearmain, Cox's Pomona, Cox's Orange Pippin, Gascoigne's Seedling, Mère de Ménage, Peasegood's Nonsuch, Jubilee, and Blenheim Orange Pippin. All of these varieties are worked on the Paradise stock. We could not fail to remark the healthy appearance of all varieties of Apples, Plums, &c., and the entire freedom from aphids, and of the "worm i' the bud," Winter Moth and Codlin Moth, a pleasant state of things which is due to spraying the trees several times with Paris Green for the larvae, and quassia for the aphides. Of Plums there are great breaks of Rivers' Early, Denyer's Victoria, and various Gages: many of the trees being in bearing condition, and all were in a vigorous condition.

It was a genuine pleasure to us to observe in this

nursery a desire to keep abreast of the newer knowledge and methods whilst retaining all that is of value in the old. Especially was this to be noted in the use of fungicides and insecticides, the lamentable effects of the non use of which are only too common, even in such a famous fruit growing county as Kent.

MESSRS. H. CANNELL & SONS.

We have referred on several previous occasions to the work carried on at Eynsford by Messrs. H. Cannell & Sons, with a view to raising in this country flower and other seeds that are still imported largely from the Continent, and which a few seasons ago were obtained exclusively from foreign sources. Taking advantage of a bright day during the present week, we revisited the establishment, to see what the harvest of such seeds for the present year promised to be. Most gardeners are probably aware that Eynsford is the next station below Swanley Junction on the London, Chatham & Dover Railway; that it lies pretty high, and that the ground where the tender annuals are grown for producing seeds is a valley with steep sides very much exposed to light and all possible sunshine. Hence the position has been chosen for the purpose to which it has been put, and in this sense is exceptional. But there are numerous other spots, we doubt not, in Kent and the adjoining counties, where the work might be done as well as here, if commenced under energetic management. The results of the present season are not required to prove the capacity of our land or climate to produce seeds that English seedsmen have habitually permitted Germany to supply them with; for several years past this has been a fact to some of us. It would be mere affectation to pretend other than satisfaction at every fresh evidence English producers exhibit of a desire and ability to raise or manufacture for themselves an article, the supply of which they have heretofore obtained from outside sources. This much is said without the least intention to despise foreign produce, upon which we are continually dependent, and for which the country is grateful. If there is any gardener or seedsmen who doubts the capacity of our own climate to perfect seeds of all sections of Asters, he should run down to Eynsford during the next fortnight. The evidence Mr. Cannell will be able to give him should be conclusive, and it will be afforded freely.

Asters—The breadths of these Asters may be seen at present with blooms in perfect condition, others going to seed, and with some seed already developed. Of course, when this last stage is reached the flower-stems are removed, and then exposed to sunshine under glass. Thus the Comet section had been removed altogether, as it is the first to be harvested. Other types were still in the field, including Victoria, Emperor, Pæony-flowered, Crown, Shakespeare, Mignon, Jewel, English Quilled, Comets, Needles, &c. All of these, and indeed every description of Aster, we were informed, produce capital seed at Eynsford, and of all, except novelties, the stock in the nursery is raised from seed so obtained. Owing to the construction of the flowers, the most difficult to seed are the Pæony, Victoria, and Emperor types; the most easy being the quilled flowers, which have always been grown as well in England as anywhere. Mr. Cannell assured us that sufficient seeds of every section are obtained to supply the whole of his private trade, and for planting again in the nursery the following spring. These seedlings are dibbled out towards the end of May or in June. It would serve no purpose to enumerate the very many varieties of different colour in all the sections, but the yellow-flowered variety of quilled Aster, known as Eynsford Yellow, may be mentioned as being decidedly distinct and the best yellow-flowered Aster. There is a novelty described as a yellow-flowered Victoria, but as we saw it, the flowers were only cream-coloured at the most. Speaking of novelties, there are several from the continent, including the Victoria just mentioned; *L'Idéale*, a white-flowered Aster with smooth petals, excellent flowering habit, so that when pulled up the plant forms a fine white bouquet in itself. In shape and size of flower, it looks like a rather large Mignon. X-rays

represents two varieties, one white-flowered, the other purple; the florets are quilled, and the blooms pretty fairly represent some of the Japanese Chrysanthemums.

MISCELLANEOUS.

Most of the Stocks, including the biennial ones, are grown in pots, and being flowered under glass, the perfecting of the seeds is ensured. Turning from the Asters, there are beds around of various flowering plants, all being grown to produce seed. African and French Marigolds, Dianthus, Lobelias, Salpiglossis, Violas, Verbena hybrida (an excellent strain with extra large flowers), Nasturtiums, Phlox Drummondii, Petunias, Antirrhinums, Delphiniums, Carnations, Pentstemons, Godetias, Coreopsis, and too many others to be mentioned here.

Owing to the dry weather during the summer, the seed-harvest is rather earlier than usual, and should the present bright sunshine continue for a fortnight the quantity and quality of the seed will be most satisfactory. A white, single-flowered Petunia named Snowball, a Continental novelty, was very promising; as was a semi-double variety of dwarf Lobelia, named Duplex, with flowers of intense colour. In the bottom of the valley many beds of Violas were still flowering freely, among them being a fine yellow one, named Christina Robinson, raised at home, which we think gardeners will value.

Vegetables, not less than flowers, are planted in the nursery and adjoining fields to produce seeds, and excellent Parsley, Lettuce, and other kinds, may be seen close to the Asters. Onions are successfully grown and seeded, the large breadth covered with bulbs to flower next year being in every way satisfactory. A stock of exhibition-sized bulbs has been housed, of excellent quality, being sound and fully ripened.

When the numerous features in the seed-grounds have been studied, the houses where the seed-drying is effected may be visited. They stand on a hill, are span-roof and light—just the kind suited to Melon, Cucumber, or Tomato-growing, to which purpose they are put during the summer. Now, however, they are full of seeds, principally of flowering plants, and no better place could be desired to thoroughly dry and ripen them. Leaving the wonderful seed-farm, the management of which must require unremitting care, industry, and patience, we are driven back to

SWANLEY,

but by a round-about way, for the purpose of noting two systems of fruit-growing, the lazy method, and the up-to-date intelligent method. We are not concerned with this at the present, however, and reaching Swanley, there was plenty to interest one for a very long time. The zonal Pelargoniums, and other plants for winter-blooming, are looking capital. Three houses were occupied by Cannas, and one of these especially presented a gay picture. Cannas are obtained in bloom the whole year round, and at the present there are numerous varieties in fine flower. We will mention a few extra good ones that any gardener may obtain with confidence that they will please:—Aurora, orange-scarlet, a well-formed flower, habit of plant dwarf; Germania, scarlet, with a suspicion of yellow towards the margin of segments; the well-known Queen Charlotte, an excellent variety; American Flag, orange-red, with a yellow fringe; Beauty Poitevine, vermilion-crimson; Persoa & Co., crimson; Emilie Lorenz, very fine, a dwarf plant, with a compact inflorescence, flowers yellow, marked with blood red; Incendie, similar to the last-named, but the colours less decided; Souvenir de Antoine Crozy, Alphonse Bouvier, intense crimson; M. H. Debrousse, spotted yellow, habit very good; Madame Pichon, yellow, with suffused red spots; Madame Perrin de Isles, quite a new shade of colour, perhaps best described as red, over which is a silvery hue, and suspicion of purple—a first-rate novelty; and Madame La Baronne P. Thenard, also a new shade, being distinct orange. The two last-named are acquisitions.

MESSRS. J. CHARLESWORTH & CO.

The collection of Orchids obtained by E. H. Woodall, Esq., St. Nicholas House, Scarborough, has passed into the hands of Messrs. J. Charlesworth & Co.,

Bradford. The collection is famed for its fine specimens, and the remarkable varieties it contained, many of which have from time to time delighted the visitors to the Royal Horticultural Society's shows. Among them may be noted some grand examples of Vanda corulea, one of which secured a First-class Certificate; a fine specimen of Cypripedium insigne Sanderae, the rare, scarlet-flowered Renanthera Irmschootiana, Cypripedium Rothschildianum giganteum, C. Leeannum giganteum, and some remarkably fine Cattleyas and Laelias, among which are capital specimens of Laelia crispa superba, and Cattleya Loddigesii, sent direct to Mr. Woodall by desire of the late Emperor of Brazil.

Messrs. Charlesworth & Co. have also acquired the collection of M. Robinow, Esq., Hawthornden, Didsbury, Manchester, a Guatemalan merchant, who had exceptional facilities for procuring the best varieties of everything from the countries in which he had correspondents; hence his magnificent specimens of the best form of Lycaste Skinneri alba, and other rare varieties. The collection, which has been carefully worked up for the last twenty years, contains Gramatophyllum speciosum, Coelogyne cristata alba, in fine condition; Vanda Sanderiana, and other showy Vandas and Aerides, and many rare species. Both the late owners are giving up their collections, owing to indifferent health rendering it inconvenient to afford their hobbies the proper amount of attention. J. O'B.

KEI-APPLE AS A HEDGE PLANT.

THIS shrubby South African plant (Aberia caffra, Harv. & Sond.), a Bixiaceae plant, is armed with long spines, and makes excellent hedges. It is evergreen, and bears fruits like small yellowish Apples. When fresh they are acid, and used as a pickle; when ripe they make a good jam. The *Waikato Times* of New Zealand, recommends the Kei-apple as a hedge plant in the following terms:—

"One is always hearing complaints now-a-days of the paucity of good plants suitable for hedge purposes. This harbours the Wheat-rust or the leech, but dies out in patches; while another would be admirable were the cows not so fond of it. This being so, the thanks of the community are due to Mr. A. Tempest, of Parnell, for his enterprise in introducing and propagating the Kei-apple. It was Sir George Grey, I believe, who first mentioned the shrub, which grows wild upon the Karoo, or sandy plains of South Africa, and it certainly seems a perfect hedge plant. It is a sturdy, stocky, short-jointed grower, an evergreen, and with thorns which grow to 6 inches long and over, and a 'perfect terror to evil-doers,' be they beasts or human beings. As an added advantage, the female plants (they are of both sexes) fruit heavily, bearing in great quantity yellow Plum-shaped fruits, the size of a Green Gage, which are both pleasant eating, and make an exquisite jam. Orchardists would do well to bear this shrub in mind when planting."

To this the following note is added in the *Agricultural Journal* of the Cape of Good Hope:—

"It will be noticed that a wrong part of the country is stated to be the native habitat of this plant, but all the good qualities as a hedge plant are perfectly true. In some old book of travels in South Africa, it is stated that on the eastern coast there were 'wild Apricots'; were these Kei-apples? Few people like to eat the fruit raw, but the jam is first-rate. A proportion of Kei-apple, with Tomato, would make a good jam."

THE WEEK'S WORK.

PLANTS UNDER GLASS

By G. H. MAVCOCK, Gardener, Luton Hoe Park, Luton.

Indian Azaleas.—Thoroughly cleanse the structure in which it is intended to house these plants, as they will require to be taken indoors very soon. The plants themselves should also be cleansed with a solution of soft-soap and tepid rain-water, or by the use of some safe insecticide. To effect this, lay the plants on their sides to prevent the liquid from entering the soil. Immediately the plants are housed and dry, well fumigate the house for the purpose of killing any thrips that remain.

Ivy-leaved Pelargoniums.—These may be propagated, placing four or five cuttings in a pot. Keep them in a cool-house, and rat at the root, until roots have formed. They be potted off as soon as they are struck, growing all the winter; thus treated they would good decorative plants by next season.

Chrysanthemums.—Vigilance will be required down earwigs, or they will prey upon the selected to form the early supply of bloom. all lateral growths, and see that the plants suffer from want of water. The surface of may appear moist when the roots are not, rap every pot carefully with the knuckles the matter. Preparation should be made for the plants, that, should early frosts occur, they may be removed under cover expeditiously.

General Work.—All other plants that were outside for the summer months, will need removed to the houses very shortly. If it ticable to devote small houses to some of the cial species, the work is greatly facilitated. case, no plants should be housed that thoroughly clean. The houses, too, should be cleansed for their reception; the creepers thinned out, as the case may require, and pests destroyed. If the plants have to be housed containing mixed collections, the arrangement should permit of the different species being separate groups.

THE HARDY FRUIT GARDEN

By H. W. WARD, Rayleigh, Essex.

Transplanting Young Fruit Trees.—In most young trees of the Peach, Plum, Pear, &c., are temporarily till space on the walls and in borders and orchards, can be found them. By following this plan the trees in time size, and the foundation of the future besides getting well provided with roots prepared trees do not feel removal much away the following summer unchecked is especially if they are transplanted in the before the leaves fall, that is towards the next month. In order to transplant satisfactorily, they should be lifted with of the earth adhering to the roots, as of the fibres intact. The soil for 18 to 2 feet from the stem of wall-trees, and distance, or a little more, according to size case of trees growing in the open, should be over with a fork, and watered a day or two digging up the trees, so as to insure the operation. On beginning to dig up a tree, should be opened out about the distance more or less, according to the size of tree about the same depth, the soil being carefully with a fork from beneath the roots until the of the mass of soil is reduced sufficiently. two or three men to lift it on to a strong gal which should have been placed under the b it is still in its place. By this means the be readily lifted without the soil coming a the roots. The hole at the new station of should be a little larger than the ball, and prepared in readiness for the tree. If the good, i.e., loamy, inclining to be heavy rat light, and about 18 inches deep, all that sary is to excavate the hole to the prop breaking up the soil in the bottom of the a fork, and placing a portion of the top spi leaving the soil somewhat high in the for a standard or bush tree, rounding off to for wall-fruit trees. Being satisfied that the deep enough to take the mass of soil without burying the crown of the root mor inch, place the mass in the hole, rest mat from beneath the ball, cut off strag damaged roots, and work some of the under and among the roots protruding from of the ball. In planting, allowance should for the soil subsiding 1 or 2 inches in t of as many weeks. When the soil filled in round the ball, mulch with a 2-inch short dung, and afford the whole a thorough tion of water. If the staple be poor, shallow for near the water-line, means should be render it better adapted to the requirements tree by adding thereto road-side parings th and horse-droppings or short dung one whole being well mixed before being p hole. In the case of wet land 6 inches of c brickbats should be put into the hole for and the trees planted on slight mounds. event of the staple being unduly heavy,

chalk, lime-rubble, or leaf-mould, if obtainable, should be added; lime-rubble and leaf-mould applied together would prove beneficial. Trees of the Peach, or choice varieties of the Plum and Pear, transplanted to sites against walls having south, west, and east aspects, will be the better for having a mat or two hung over them during the heat of the day for a week or ten days after removal, syringing the trees overhead in the afternoon.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Spring Cabbage.—The crop of Spring Cabbage being usually regarded as an important one, the early cutting of which affords a good deal of emulation to the craftsman, every effort should be made to push on the plants at this season. The plantations of the earliest-mixed plants should be hoed on a dry day, and after lying untouched for a day or two, the plants earthed-up with the hoe. The main batch of plants of the principal sowing will now be large enough for planting on the ground occupied by the Onion crop; the soil if it be light and in good heart, being merely dug over slightly, or deeply hoed, and the rubbish raked off. In most cases, however, it will be advisable to afford the land a light dressing of good manure, and dig it. Too much space between the plants is not desirable, and 18 inches each way is sufficient for all the early varieties of Cabbage. If slugs be troublesome, dust the land with soot and lime, doing this in the evening or early morning, and fill up vacancies in the rows without undue delay.

Endive and Lettuce.—If well-rooted stocky plants are still to be found in the seed-beds, they may be dibbled into the soil of a south or other warm border, planting them at 15 inches apart, and keeping a sharp look-out afterwards for slugs and grubs of various kinds, creatures that are very fond of newly-planted Lettuce. This batch of plants will prove of great use during the last two months of the year, if means can be afforded to shelter them where they grow from frosts and heavy rains. If frames or pits are available at that season, the plants, when fully or partially grown, may be planted in these rather closely, and given proper attention in the matter of airing, they will remain fit for use for a long period. Lettuce-seed may still be sown in a sheltered plot of ground for affording plants for setting out in the early spring; Bath, or Brown, and Hicks' Hardy White Cos, and All the Year Round Cabbage being the best varieties to sow at this season.

Mushrooms.—Endeavours should be made to supplement the supply of Mushrooms obtainable in the fields and from Mushroom-beds in the open, by making beds in the Mushroom-house or in warm sheds. In making up beds in sheds it is necessary at this time of the year to make them thicker than is necessary in warmer weather, and after spawning them, which should be done as soon as the heat has declined to 85°, to cover the bed with a good thickness of sweet hay or dry litter. If the supply of fresh horse droppings be insufficient, fresh tree leaves may be mixed with the manure, in the proportion of one of leaves to three of manure, or dry loamy soil in about the same proportion may be used instead, taking care to mix all thoroughly together a few days before making up the bed.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Rows.—Blooms promise to be more plentiful than was at one time anticipated, the rains having induced free growth, which is clean and free from rust and mildew, so far. Briar-stocks that broke too late into growth for the first budding may be budded if the bark runs easily. These late buds if they take well remain dormant till the spring, which is better than having buds break into growth, which being tender when the winter comes, is liable to be cut off by frost. The buds on early worked Briar-stocks should have the ties round the buds loosened or removed, as may be necessary. The strong shoots on climbing Roses should be loosely tied in, or they may be broken off by winds; and all weak and blind shoots, and the shoots that have borne flowers, clean cut away. This will strengthen those that are left, by letting in the light, and utilising the energies of the plants in the right direction.

Propagation.—Cuttings of *Coleus*, *Alternanthera*, and *Resinas* for furnishing stock in the spring, should now be taken from the plants in the beds, and inserted in pots of sandy soil, surfaced with silver sand, and plunged in a mild hotbed to form roots. The cuttings of *Mesembryanthemum cordifolium variegatum* being liable to damp off in a hot

bed, can be struck with the least amount of loss if the cutting-pots are placed on a shelf in a warm house that is kept moderately dry. Having watered in the cuttings, the soil should be allowed to get rather dry before water is again afforded, and all decaying cuttings removed as soon as they are observed. Cuttings of *Fuchsias* may now be struck, and in the case of bedding varieties, they may be kept growing till next spring, either in the cutting-pots, or as potted-off plants. *Fuchsias* form good subjects for filling vases and baskets, as well as "starers" or solitary plants in the beds. The bedding *Pelargoniums* have made moderately sturdy shoots which will make capital cuttings should more stock be required to meet the requirements of next year. The cuttings at this late part of the season must be rooted in pits, or frames, and not out of doors. *Calceolarias*, *Violas*, *Geranias*, &c., may remain until quite the end of the month, with the certainty of the cuttings striking freely at that time.

Carnations.—The layers, if well attended to from the first, will have become sufficiently rooted to allow of severance from the parent plant and planting where they are to flower next year, or for potting and keeping in cold frames during the winter. In all but the very coldest parts of these islands and in smoky centres, border Carnations are best outdoors, and especially if the soil be light. In clayey and wet soils, winter protection is often necessary; but the less codling, as a rule, the plants receive, the better. The beds and sites for receiving the layers should be changed annually, and should be prepared by digging and manuring, new loam or decayed manure, or both, forming a good dressing for the beds or patches. After making the soil firm by treading it evenly and regularly all over, and in the case of beds lining them out in quadrangular shape, plant out the stronger and better-rooted layers at one foot apart. Potted plants should be made firm in the soil, and afforded an abundance of air always, except during hard frosts.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

Odontoglossums, &c.—Where these plants are cultivated largely it will take some considerable time to get them all repotted, and while this work is in progress, other plants will be requiring similar attention. *Lælia elegans* now flowering from the new pseudo-bulbs should be repotted, if necessary, as soon as the flowers fade, the new roots at that time emitted from the base of the flowering-bulb, enabling the plant to establish itself. Afford plenty of drainage in the pots, and a thin layer of sphagnum-moss over the crocks; and use fibrous peat and sphagnum-moss in equal quantities, mixing plenty of small clean crocks with it. When repotting any tall-growing species of *Lælia*, make the pseudo-bulbs firm by fastening them to a neat and durable stick, and keep the base of the plant above the rim of the pot. At this period some of the plants are in bloom, others fast sending up bloom-spikes, the young pseudo-bulbs being especially tender and subject to decay from water lodging in the centre of the growths, too great moisture in the compost, or a too low temperature; or excess of moisture in the atmosphere will also cause the leaves and bulbs to decay. If injury arises from excess of moisture at the root, forthwith repot the plant and place it in a drier and warmer house. If caused by the other evils, which are only local, the affected pseudo-bulb may be removed almost to its base, affording water with care afterwards, and gradually exposing the plant to more light and air. If a plant exhibits no further signs of discoloration, it will commence to root, and may then be repotted in the manner advised for healthy plants. A newly-potted plant of *Lælia elegans* requires careful watering, as any excess causes the tips of the roots to become black. First afford as much water as will moisten the compost, and subsequently less frequently, and gradually diminish the quantity according to the activity of the roots. At the present time, and during the winter, the plants of this species should be placed at the warmest end of the Cattleya-house, or where the warmth is about 60°. Our late-flowering plants of *Lælia purpurata* are starting into growth, and any that require repotting will be attended to when the growths are a few inches high. Large specimens that may have lost many old back pseudo-bulbs may be divided and remade up; decayed portions of the rhizome, dead roots, being removed, and the worn-out compost replaced with new. *L. purpurata* requires a deep pot and plenty of compost. The varieties of *Cattleya Eldorado* may now be repotted. Keep them in the warm part of the Cattleya-house, and when the night temperature of that house

falls to or below 60°, place them in the cooler part of the East Indian-house. *C. Bowringiana* which has ceased to grow, does not need frequently to be afforded water, the pseudo-bulbs turning black, and the inflorescence being lost if too much moisture be afforded. This applies also to plants of *C. Skinneri*, *Cattleya Dormaniana* and *C. bicolor*. *C. Lawrenceana*, *C. exoniensis* ×, *C. amethystoglossa*, *C. elongata* (Alexandria), and *Lælia tenebrosa*, now in good growth, will be benefited if placed at the warmer end of the house and raised to the roof. Small plants being suspended from the roof, will assist in the timely formation of the new pseudo-bulbs. *C. Dowiana* and *C. D. aurea*, now in bloom, should be placed where they can get plenty of light to ripen their growths, water being carefully afforded. *Lælia pumila* and its varieties should be hung up to the roof of the Cattleya-house, plenty of water being afforded them till the flowers fade, and growth for the season is at an end. *Cattleya Trianaei*, *C. Mendeli*, *C. Schroderae*, *C. Percivalliana*, *C. maxima*, *C. labiate* (the autumn-flowering variety), and others which have ceased to grow, will require less water at the root, every ray of sunlight, and as much fresh air as it is practicable to give them. During the dull damp weather it is advisable to look over the *Cattleyas* and *Lælias* every morning, letting out the moisture that gathers in the sheaths, which, if not removed by slitting those that are damp-looking, will cause decay. The plants so treated should be kept dry at the root, and removed to a drier house for a few days. If a pseudo-bulb is seen to be turning black, the plant should be treated as advised for *Lælia elegans*.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Tomatos.—Plants which have borne much fruit should be removed, and new plants for winter-fruiting planted in their places. These plants should have been setting their fruit outdoors, but it being risky to allow them to stay there any longer, it is well to plant them forthwith under glass. The house or pots, before the plants are placed in them, should be cleaned and fumigated, and if the Tomato-fly has been a source of trouble, flowers-of-sulphur may be burned in them, or Richards' XL All employed in its place. The proper drainage of the beds is an important matter, and this must be examined, and if found faulty, put in good order. Be careful in fastening the plants to the trellises that the stem does not get twisted; and rub off all laterals, so as to allow of the plants being stood nearly close together. If the plants are already in their winter quarters, the roots must not be allowed to ramble at will, but they must be confined or restricted in some way. It is always advisable to set the blooms, if possible, out-of-doors, the conditions favouring setting during the fine days in early September. The redundant growths of shoots and leaves on fruiting plants should be regularly reduced, so that light may reach the ripening fruits. Afford water rather sparingly, and ventilate freely in fine weather, and gather the fruit as soon as it is well coloured. Gather all fruits on out-of-doors plants if frost appears imminent, hanging them in a warm glass-house to ripen.

Pinery.—No time should now be lost in getting the various divisions put in order for the winter, washing the walls, &c., with soft-soap and water in which half-a-pint of petroleum to the pailful is mixed; not forgetting when washing the walls to wash those of the pit that will contain the fermenting materials for bottom-heat. If tree-leaves in a fresh state are used at this season, great care must be taken that the plants do not suffer from any excess of heat in the bed, fresh leaves being very liable to heat violently, which, if it happen when the bulk of the plants are resting, would be very disastrous.

Fruiting Plants carrying fruit will require a steady bottom-heat of 85°, and to be examined carefully once a week to ascertain if any plant requires water at the root, water being afforded a plant till the fruit it is carrying begins to colour, and then withheld.

Succession-plants, which have quite, or nearly finished their growth for the season, should be kept in a moderately dry condition at the root—not too dry, or they may fruit prematurely. The bottom-heat should not exceed 80°, or the night temperature 62°.

Snakers which have made free growths, and are likely to get pot-bound before the spring, may still be repotted into comparatively small pots. Advantage should be taken of the first warm day to wash the walls and glass of all pits and houses containing Pines, even should the occupants of the same need no immediate attention.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	SEPT. 21	Royal Horticultural Society's Committee.
SALES.		
MONDAY,	SEPT. 20	Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	SEPT. 21	Bulbs, at Protheroe & Morris' Rooms. Clearance Sale of Glass Erections, Piping, &c., at the Layfield Nursery, Sudbury, Harrow, by Protheroe & Morris.
WEDNESDAY,	SEPT. 22	Bulbs at Protheroe & Morris' Rooms. Clearance Sale of Glass Erections, Piping, &c., at the Rose Nursery, High Street, Clapham, by Protheroe & Morris.
THURSDAY,	SEPT. 23	Bulbs at Protheroe & Morris' Rooms. Sale of Palms, Ferns, Shrubs, &c., at the Floral Nurseries, Castle Hill, Maidenhead.
FRIDAY,	SEPT. 24	Bulbs at Protheroe & Morris' Rooms. Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—56.6°.

ACTUAL TEMPERATURES:—

LONDON.—September 15: Max., 67°; Min., 52°.

PROVINCES.—September 15: Max., 62°, at York; Min., 53°, at Sumburgh Head.

Do Orchids degenerate? THE report of the Congrès Horticole de la Société Nationale d'Horticulture de France, 1897, revives the question, "Do certain Orchids degenerate under cultivation?"—a question which has been frequently touched upon in the pages of the *Gardeners' Chronicle*. In speaking on the subject, M. GEORGES GRIGNAN made some excellent remarks, the tendency of which was to maintain that the question was by no means settled, and that, were it possible, it should be submitted to universal suffrage; and even then the matter would possibly be as indefinitely terminated as it is now.

We may say that we agree with the views expressed by M. GEORGES GRIGNAN; and as it is a matter of the highest importance to the large number of amateurs now cultivating Orchids, we venture to touch on the subject in the hope that some of our readers may be able, and willing, to give their version of it.

In the first place we should say that, in order to start fairly, the question should rather be put, "Do certain Orchids degenerate under cultivation more than other plants which are not easily propagated?" It may be said that all cultivated plants which are not readily increased by seeds, cuttings, runners, or in some other manner whereby the re-establishment of the plant as a young specimen, free from the infirmities of the old stock plant is secured, are liable to degenerate more or less quickly, the rate in a great measure being determined by the care bestowed on them, and the suitability or otherwise of their surroundings. It is not too much to say that plants, like men, must terminate their existence at some time or other, whether in their native habitats or under cultivation; and it is doubtful whether a huge mass of *Cattleya* freshly imported does not last as long as a single specimen in the Orchid-grower's hands, if it be properly treated, as it would be in its native habitat. But in its native home, when the feebleness of old age comes on, some of the stronger pieces on its outer circumference establish themselves as centres, and when the main plant collapses, they start anew as fresh plants. This process (a very common one among hardy perennials) is analogous to what is called degeneracy under

cultivation, and one of the methods of preventing the loss of the plants would be to imitate nature and start with fresh young specimens. This practice is much resorted to by nurserymen, and there are numberless instances of Orchids which were only imported as a single specimen, or in other cases as two or three specimens, and by propagation under cultivation, they have become tolerably plentiful, and more healthy to-day than was the first imported plant. One of the most familiar instances of this is *Dendrobium nobile nobiliss*, though that is scarcely a severe test, for the species is not generally on the black list, but still there are numbers of gardeners who do not succeed in growing it well.

And with regard to the list of species difficult to grow, it appears that what one grower considers difficult, another manages very well; and the genera which are considered impossible to cultivate to-day, may be as easily managed by those who understand them in ten years' time,

unsatisfactory, though here and there suffice specimens of them in rude health may be found to redeem them from the list of unmanageable which, generally speaking, means plants understood, or for which no proper accommodation has yet been found. Of these we mention *Saccolabiums*, *Aërides*, *Vandas*, and other evergreen Orchids of the same class with which the greater number of Orchid-growers fail, probably from the same cause: growers of the *Catasetums* failed in time gone by, viz., an excess of heat and moisture at the season, when, though evergreen, they require, in the same manner as the deciduous plants coming from the same districts, a resting season, though not necessarily a drying-off.

Cattleya Mossiae has by some means got the reputation of degenerating, though in some of our old gardens, where a few Orchids are grown among other plants, it is no uncommon thing to find great specimens of it, and of other reputed "bad doers," which have been in



FIG. 59.—A PLANT OF *NEPENTHES* X *TIVEYI*: PITCHERS COLOURED BROWN AND GREEN.

(Shown by Messrs. J. Veitch & Sons. See p. 201.)

as some of the things considered very difficult to manage ten years ago are easily grown to-day. Take, for example, the *Catasetums*, *Mormodes*, and *Cycnoches*, which up to a few years ago had a bad reputation as being unmanageable. To-day you may see in Sir TREVOR LAWRENCE'S collection, and in others, a large number of specimens which have been cultivated for years, and with increasing strength of flower and growth. The reason of this change will explain a large number of successes with plants that were formerly regarded as difficult.

Formerly, when *Catasetums* and other plants of the class alluded to were received, they were placed on the staging among other Orchids, and watered more or less all the year round, like too many other subjects which require a distinct period of growth, and as well marked a period of rest—and degeneracy and death were the consequences. Now, they receive special treatment, and are grown well, and afterwards they are properly ripened; the period of inactivity serving the all-important purpose of ensuring their doing but twelve-months' work in one year. There are yet many classes which are at present deemed generally

same garden for a great many years. In such specimens now are more often found gardens where a collection of Orchids is attempted than they are in collections almost exclusively of Orchids, and in which degeneracy is said to be noted. And this brings us to another thought as to the cause of the so-called degeneracy, viz., overcrowding. In the early days of Orchid culture small consignments were the rule, the specimens were carefully guarded and given space by the cultivators who received them, now the plants come over by the thousand, it is quite a common thing for amateurs to buy a hundred or so of a species at a time. The consequence is, that suddenly an amateur starts with new houses and plenty of room. In early days all goes well, for anyone can grow Orchids for a time; then, as large quantities are continually being added, the houses begin to get crowded, and the owner finds for the first time that Orchids are not so easy to grow as he thought, and that some of them are degenerating. The plants have the same nature as they had when they did well, the conditions are altered. The subject is an interesting one, and its bearings numerous.

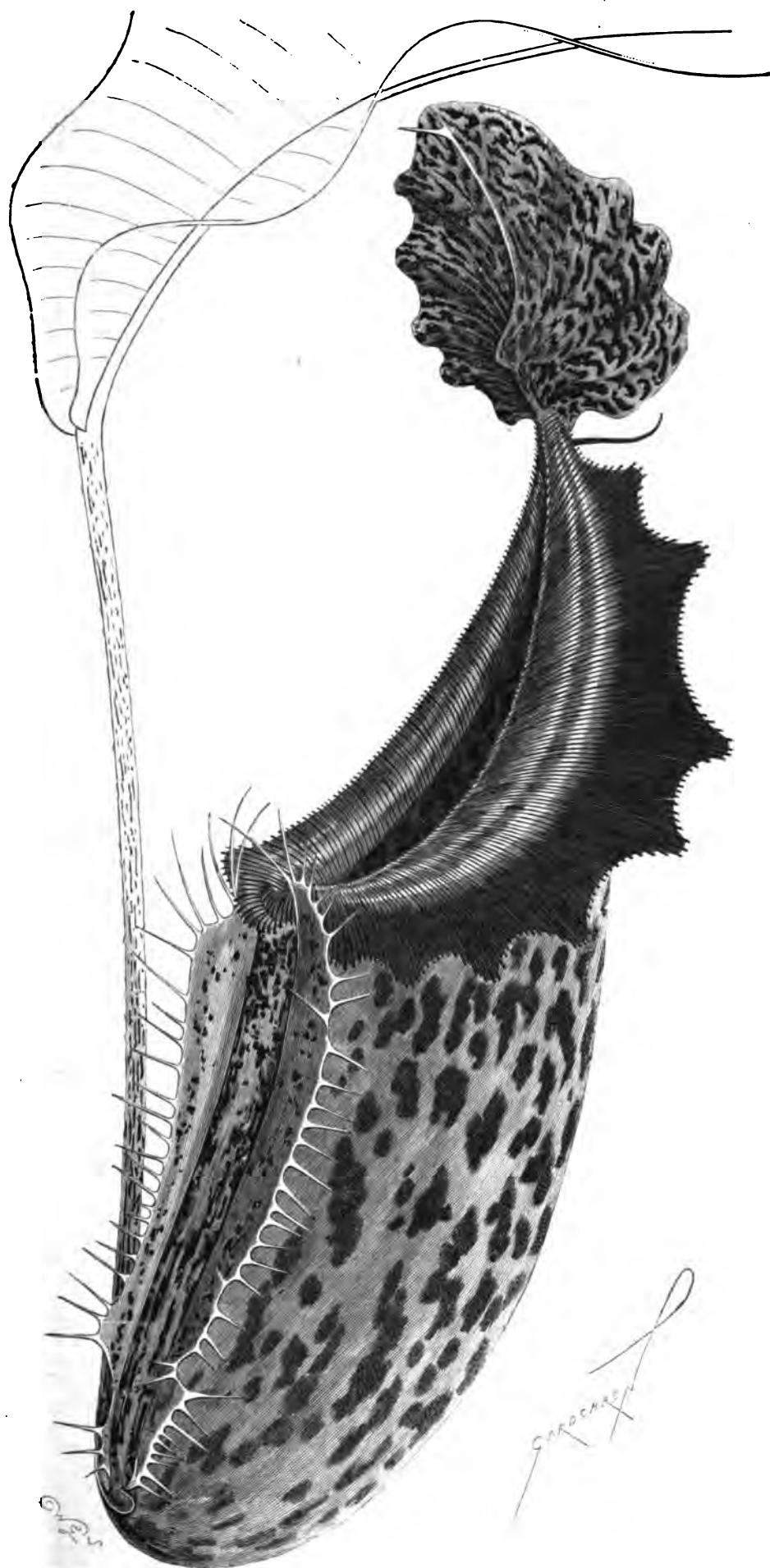


FIG. 60.—PITCHER OF NEPENTHES X TIVEYI.

and in future issues we hope, with the assistance of some of our readers, to give particulars of some species of Orchids, of which the plants noted have been in cultivation for a great number of years.

But before leaving the subject, we would like to point out the importance of raising Orchids at home. To a great extent, so far, the experiments have consisted of raising cross-bred varieties, and our experience of these tends to prove that the home-raised plant has a better constitution, and can better adapt itself to our climate and houses than the imported specimens can be expected to do. The question is, then (although it would take time), would it not be wise to raise uncrossed, or true, many of the finer varieties of Cattleyas, Lælias, and other popular Orchids, and thus, while increasing the plants wished for, get also the better constitution which comes with the seedling plant raised in the country in which it has to grow?

It is true that disease, which many Orchid-growers attribute to unsuitable surroundings and errors in treatment, attacks Orchids in some collections; but it can no more be spoken of as either the cause or the effect of degeneracy, than the diseases attributable to unhealthy surroundings and errors in diet which afflict human beings can be said either to point to, or arise from the degeneracy of mankind.

NEPENTHES X TIVEYI.—Our illustrations represent a full-sized pitcher and the plant as it appears at the present time, of a new hybrid of *Nepenthes* raised by Messrs. J. VEITCH & SONS, of the Royal Exotic Nursery, Chelsea, and exhibited by them at the Royal Horticultural Society's meeting held at the Drill Hall, James Street, Westminster, on Tuesday, 7th inst. The plant is the result of a cross between the species *N. Curtisii* and *N. Veitchii*, and is named in honour of Mr. TIVEY, one of Messrs. VEITCH's able hothouse foremen. The ground colour of the body of the pitcher is of a light green, streaked and blotched with a bright brown tint, as is likewise the prolongation of the mid-rib of the leaf on which the pitcher depends. A conspicuous feature is the broad, convex rim of the pitcher, which is of bright reddish-brown, running into a lighter shade towards the inner edge, and beautifully lined. The operculum or lid resembles the rest of the pitcher in regard to the ground colour and markings; the wings are green, and possess a few long hairs. The pitchers in general partake of the characteristics of both parents—*N. Veitchii*, a Bornean species of great beauty, going sometimes under the names of *villosa* and *sanguinea*, and figured and described in the *Gardeners' Chronicle*, December 7, 1881; and *N. Curtisii*, also Bornean, introduced by Messrs. VEITCH through Mr. CURTIS and figured and described in the *Gardeners' Chronicle*, December 8, 1887.

THE CULTIVATION OF CYCLAMENS is the title of a lecture to be delivered at a meeting of the Committees of the Royal Horticultural Society on Tuesday next, in the Drill Hall, Westminster.

THE BRITISH ASSOCIATION.—The second Canadian meeting of the British Association, as we learn from the *Times* of Sept. 11, has come to an end. The general impression is, that in many respects it has been one of the most successful meetings ever held. In point of numbers it is, as might be expected, below the average; the total is 1860. But in the number and character of the papers, in several at least of the sections, the Toronto meeting will compare favourably with any recent meeting. In the Botanical Section the papers were almost all of a highly technical nature, dealing largely with the microscopical structure of plants. Mr. SEWARD's lecture on "Fossil-plants" was one of the most warmly received contributions to the work of the session.

THE CHURCH ARMY'S EMIGRATION TEST FARM.—The Earl of WINCHILSEA has joined the Management Committee of the Church Army as honorary adviser to the Society's emigration test farm and market garden. Mr. FRANK SPICKER, of Farnborough, has also become an honorary agricultural adviser.

THE IMPORTATION OF BELGIAN WITLOOF INTO FRANCE.—The importation of Brussels Endive or Witloof into France, according to the *Journal du Cercle Horticole du Nord*, has assumed large dimensions in recent years, and the greater part of the Witloof consumed in that country is of Belgian growth, there being, it is calculated, about a million and a half kilos. imported. The Halles in Paris and

and continues to increase its demands. The total produce of the champagne districts is some 28,000,000 bottles, and 22,000,000 are exported. In 1894 and beginning of 1895, the consignments to this country showed a falling off; however, a decided increase took place in the second quarter of 1895. While the quantity exported to us during the first five months of that year amounted to 3,252,000 bottles, it increased in the corresponding period of 1896 to 3,938,000 bottles. It is to be noted, that whilst the trade with America remains stationary, that with Russia, Germany, and Belgium shows an increase in proportion corresponding to that of our own. It would be interesting to our transatlantic friends if they could get at the actual consumption of

of low-lying fogs, the search-light which render them visible is an invaluable assistant. A year ago some accounts were published relative to the cloud effects on Mount Low and Pasadena. According to these accounts Mount Low is about 15 miles north-east from Los Angeles, and about 6 miles in a straight line from Pasadena. When the beam of light fell upon the bodies of clouds they at once became luminous, so that all the details of motion were visible; when the beam fell upon the falling rain, the great cone of light glowed like molten metal. It seems, concludes Prof. Abbe, that the formation and motion of fog and cloud at night-time could be advantageously studied by means of the search-light. The height at which fog first forms, and its gradual extension upwards and downwards during the night, would be a very interesting and profitable investigation. *Nature*, September.

THE CODLIN-MOTH.—Those orchardists who have but few Apples this year will have their compensation next year in the greatly lessened numbers of the Codlin-moth. It has been remarked that in orchards which had few Apples in any one year, the fruits were not greatly injured the following year, even when no measures were taken to prevent an attack. This was doubtless owing to the moth finding few or no fruit in which to develop the maggot.

ASPARAGUS RUST.—We remark in *Garden and Forest* for August 25, an article, with illustrations of a disease of Asparagus, appearing in the U.S.A., which takes the form of a rust, and is due to a fungus, *Puccinia asparagi*. The parasite is exceedingly minute, consisting of microscopic threads, which penetrate the tissues of the Asparagus plant, deriving its nourishment therefrom, and breaking through the surface to bear the innumerable brown spores that impart the dark colour to the spots on the stems. The Bordeaux Mixture has been used as a protection and preventive dressing. As a means of destroying the spores existing on the mature stems and leaves, collecting these and forthwith burning them, is an obvious way of lessening the risks of an attack of the fungus another year.

VALUATION OF NURSERY GROUND.—Messrs. T. KENNEDY & Co., of Dumfries, have successfully appealed against the valuation of their York Place Nurseries, at Dumfries, which was assessed at £60. The claim for a reduction to £40 was granted.

BELGIUM.—We published last week a few notes of the exhibition of the Antwerp Royal Horticultural Society. In addition to the Certificate of Rarity obtained by M. F. DE LAET, of Contich, for *Echinocactus Trolletii*, this exhibitor was awarded Cultural Certificates for *E. Wislizeni* and *Melocactus communis*, a Gold Medal for a group of Cacti, and for another group a silver gilt Medal.

PUBLICATIONS RECEIVED.—*Kew Bulletin* for August and September. Diagnoses Africana, embracing 181 species of plants; also a few miscellaneous notes.—*Dictionnaire Iconographique des Orchids*, by A. COGNIAUX and A. GOOSSENS: Epidendrum.—*Florilegium Harlemense*. Coloured plates, with descriptions of bulbous and tuberous-rooted plants.

A "CRESTED" BEGONIA.

DURING the present year we have on several occasions, given illustrations of "crested" Cyclamen flowers, and in fig. 61 is reproduced a bloom of a tuberous-rooted Begonia shown at the last meeting of the Royal Horticultural Society, from the gardens of Sir Trevor Lawrence, Bt., Dorking. Mr. Bain writes us: "I cannot yet say much about the crested Begonias. Sir T. Lawrence has half a dozen varieties of them in different colours, and showing crests of different degree. By saving seed from the best crested varieties, I hope to obtain flowers with larger crests. The varieties appear to retain their flowers longer than the normal single-flowered ones." In the case of the Cyclamen the "crest" tendency has been much developed, and no doubt this is just as possible with the Begonia.



FIG. 61.—A "CRESTED" BEGONIA.

the environs are credited with a million kilos. a year, which is about three-fourths of the entire foreign importations of this salad plant. Our gardeners are evidently not the only ones who feel the pinch of "foreign" competition.

PRODUCE OF FRENCH VINEYARDS.—Trustworthy information on this subject is always of interest to consumers in this country—which is so profitable a customer of the French agriculturist. Certainly not the most or the best is made of cider, perry, and Hops in this country; and until proper attention is given to what may be termed our national beverages, French wines of a good class will always command attention. In a recent number of the French *Economist* some interesting particulars are given as to the production and exportation of champagne. Thus we are told that Great Britain is the largest foreign consumer of this wine,

champagne in the States; in this way they could get at the amount to be placed to the credit of the American producer.

THE HEIGHT OF CLOUDS.—A method of determining the heights of clouds, and especially of the ill-defined stratus clouds, by means of the search-light, was suggested by Prof. Cleveland Abbe many years ago. It was proposed to establish a search-light, the beams of which should be vertical: the apparent altitude of the centre of the luminous spot of the cloud was to be observed from a station not far away, and the height was a matter of easy calculation. Prof. C. Abbe returns to the subject in the *Monthly Weather Review* (May), and points out that with the great increase in the power of the modern search-light, further applications have become practicable; thus in harbours on the sea-coast, where one wishes to ascertain the presence and development

HOME CORRESPONDENCE.

APPLE PEASGOOD'S NONSUCH.—In calling at Falkland Park, South Norwood, recently, a bit of information which may be useful to gardeners was gleaned from Mr. A. Wright, viz., that this variety of Apple forms a fruit bud—if in bearing condition—on the terminus bud of the shoots; and if the trees are pruned on the short spur-system, the result is a barren tree. *J. B.*

THE NATIONAL CHRYSANTHEMUM SOCIETY'S DISQUALIFIED EXHIBITS.—The recent disqualification at the Aquarium Show must, in a great measure, be attributed to the ambiguous wording of the schedule. For several years past, various classes for the September Show were stated to be for "blooms of any large flowering varieties," and what is understood to be such have been exhibited with success. This year it reads the same, but a note is appended at the bottom of the amateur classes as follows: "Only the varieties included under the head of early flowering in the society's Jubilee catalogue, '96, can be exhibited in the foregoing classes." This apparently was overlooked or misinterpreted by the various exhibitors, and disqualification was the result. Among the early-flowering varieties given in the catalogue, very few, if any, can be called large-flowering, neither do they all bloom in September. Should not the foot-note distinctly state that the whole of the varieties must be culled from the list as given in the catalogue? And, further, is it advisable to attempt to encourage the cultivation of these small-flowering early varieties, except it be in the natural or bush form? If such stipulation be considered a wise one, then the selection must be compiled with more care than has been displayed in the Jubilee catalogue, for several of the finest and largest-flowering early-blooming varieties are omitted. Two in particular I would mention, viz., Queen of the Earlies and Barbara Forbes. These were sent out as early-flowering varieties in the spring of 1896, and were shown at several of the earlier meetings of the National Chrysanthemum Society in the autumn of 1895. Of the first-named, the late Mr. W. Piercey, no mean authority, repeatedly expressed the opinion that it was by far the finest early white variety in existence; and two seasons ago, Mr. W. H. Lees, who is one of the catalogue committee pronounced it immensely superior to Madame C. Desgranges. Barbara Forbes received the first and only First-class Certificate awarded by the National Chrysanthemum Society throughout last September; yet, strange to relate, neither of these varieties is to be found in the early-flowering list of the National Chrysanthemum Society, and for this reason they were disqualified by the judges (to whom no blame can be attached) at the recent exhibition. That they were known to the committee is proved by the fact that they are to be found in the general selection. It is worthy of remark that several varieties which have repeatedly been exhibited and catalogued by many of the trade are omitted from the catalogue, whilst quite two-thirds of those catalogued have not and never will be grown by English growers. Annie Heard, perhaps the prettiest and most graceful single white flowered Chrysanthemum that we possess, was certificated by the National Chrysanthemum Society and Royal Horticultural Society in 1895; yet it is not to be found in the selected list of singles of the Jubilee catalogue. If not worthy of inclusion, why certificate it, and what value can the members of the catalogue committee themselves place upon the certificates? *W. J. Godfrey.*

PLAQUE OF WASPS.—I do not know if wasps are very numerous this season generally, but this neighbourhood is quite overrun with them. To-day I started five men in search of nests, and within the space of two hours they found no less than nineteen, all within a quarter of a mile of our fruit-garden. To-day I was examining a fruit of *Beurré d'Amanlis* Pear, and I found no less than twelve wasps inside of it. What can one do to protect his fruit under these circumstances? The insects attack the fruits long before they are ripe. *John Butler, Normanton Park Gardens, Stamford.*

LARGE ONIONS.—For some two or three years the Hackwood-raised Onions, chiefly Ailsa Craig, have been the best that have been shown anywhere in the Kingdom, taking all the leading prizes. What will be the entire result of the present year's crop here has yet to be seen; but there are in the garden-sheds hundreds of superb bulbs, ranging from 2 lb. to 3 lb. each, perfect in form, and as solid as a cannon-ball. It is interesting to find that these grand bulbs are

produced each year from the same ground, which is each season deeply trenched, the bottom being brought to the top every time, so that the soil is all of the same quality, and the ample feeding and great depth allow the roots to go deep, and they will do so. Allied to sowing seed under glass in the mid-winter, and putting out the young plants when strong and sturdy in April, these are the chief elements in this method of Onion production. Even if these fine bulbs had no exhibition value, and that is considerable, they constitute first-class seed stock; indeed, it is well known now, that even ordinary outdoor spring-sown seed, if from such fine bulbs, produce by far the finest stocks. I have been able to test that point, this season, on comparatively poor ground at Surbiton, having grown from an ordinary spring sowing of Main Crop, Ailsa Craig, Crimson Globe, Wroxton, and others, far finer bulbs than anyone on the 150 allotments had, with better soil than mine. This seed was saved from very fine bulbs given me in 1895, and grown for that purpose last year. The big bulbs are also valuable for baking or stewing, constituting a mild flavoured yet delectable dish. *A. D.*

LADY HUTT GRAPES.—Last year Mr. Bowerman fruited the black Appley Towers Grape finely at Hackwood Park, but it is not so good this year; and he thinks it is a variety that does best on young rods, and therefore should be grown on the long-rod system in preference to hard-spurred rods. It would be interesting to learn other gardeners' impressions. Lady Hutt, growing in the same house, is this season better than last year. The bunches are fine and massive, and the berries large. Even when fully ripe, there is in them a greenish hue that gives to the variety a distinct appearance. Judging by what is seen of the variety here, Lady Hutt should make a first-rate, late, white Grape, either for exhibition, or for the dessert. The border at Hackwood is outside, and that fact has to be taken into consideration. *A. D.*

THE SPINELESS GOOSEBERRY.—We have a bush of each of the varieties of the so-called Spineless Gooseberry, and for a spineless kind they are wonderfully prickly; they grow very slowly, have had no fruit for two years, and are apparently undesirable additions to our fruit bushes. We will try them for one more year, and if there is no improvement to the rubbish heap they will have to go. *Thos. Fletcher, Grappenhall, Cheshire.*

LARGE PEACHES.—A Peach-tree in an unheated fruit-house at Blithwaite Castle Gardens, Carlisle, has this year borne some exceptionally big fruit, and not having myself seen any of such a size, it may be of interest to record the fact. The tree is of the Barrington variety, and was planted in the beginning of the year 1893. In 1894 it produced three, in 1895 forty, and in 1896 about 140 Peaches of an average size, none of which was over 10 oz. This year it has not matured so many fruit—about forty ordinarily-sized ones, and eighteen large ones—these latter varying in weight from 10 oz. to 14½ oz., well-shaped, nicely-coloured and of good quality. They are borne on a particular branch of the tree which produced very few fruit the preceding year, and this may partly account for the size attained this year, although the limb is on the more shaded side of the tree. *J. Parkin, Blithwaite, Carlisle.*

THE SOUTHERN COUNTIES CARNATION SOCIETY.—Nothing that has been said by your correspondents suffices to remove from my mind the impression that the proposed establishment of a Southern Counties Carnation Society is a move entirely in the interests of Mr. William Garton, Jun. It is true the word "gratis" is written on the side of the circular, but it is not printed, and has evidently been added as an after-thought. The original passage runs:—"Mr. William Garton, Jun., is willing to supply each new amateur member with twelve good and well-rooted plants of different varieties, and also proposes to set aside, out of his large stock every season, a certain number of plants to be distributed among this class of competitors." I presume this was thought to be a little too much of a tout for business, and so the word "gratis" was added by the pen, after that of supply in the first line, and it is now in the form of a bribe to persons to become members. It will be observed that it does not necessarily follow that the term "gratis" applies to the last half of the passage. It therefore appears that in order to induce persons to become members of the Southern Counties Carnation Society, and also obtain possible purchasers of plants from Mr.

William Garton, Jun., a bribe in the way of a gift of plants is necessary. To this I strongly object, as subversive of all the best traditions of floriculture. Almost every so-called amateur, who grows and exhibits Carnations in the present day is a trader, and many of them publish a list of varieties they wish to dispose of. I have no doubt that what is termed in the printed circular the leading professional growers—that is, the legitimate traders—will note this, and hold themselves severely aloof from the Society, or any association with such questionable floral philanthropy. "A. D." appears to find himself in a tight place, and is driven to extremities to find a justification for his hasty and ill-advised advocacy of Mr. Garton's scheme. *An Old Florist.*

PHYSALIS FRANCHETI.—This is an acquisition to our hardy plants. I obtained seed of good vegetative power in 1896, which gave me abundance of plants, whereas that of 1895 was generally bad. The large orange-coloured calices, many of them 9 inches in circumference, have, when cut, a brilliant effect in winter and autumnal decorations of all kinds. The plant is of easy cultivation in good garden-soil, the calices colouring well if the plants are grown in a sunny spot. *N. F. P.*

FRUIT FROM THE CAPE.—Seeing the quotation from the *African Critic* in your last issue, about the apathy exhibited by some of the fruit-growers at the Cape, perhaps the following lines concerning one of the first to attempt teaching them better things may be interesting:—A young gardener named Hutt was with me at Clumber some twenty years ago. He soon afterwards went to the Cape, and is now superintendent at the office of the Board of Trustees of the Maitland Road Cemetery. Returning home some time since for two months' holiday, he visited me at Ruxley Lodge, when we talked of old matters and of new methods. The following remarks were on the Peach as cultivated in the gardens at Clumber. He observed on going to the Cape that the ground for Peach-trees was well moistened during the rainy season, and this he thought agreed with the practice common at Clumber of affording heavy drenchings to the Peach borders during winter at a time when the roots are considered by many to be at rest. I take no credit to myself in the matter of watering fruit borders, for in my apprentice days at Erskine House Gardens, under Mr. Sheila, our orders were to thoroughly water one yard at a time, before watering another yard, and so on to the end of the house, and, if considered necessary, do it all over again. Bud-dropping was not known at Erskine. Mr. Hutt, seeing how luxuriant the Peach tree grew as standards, and how they were smothered with small fruits, which were not thinned, and that when ripe they were roughly gathered into baskets for the Cape market, advised the growers to thin the fruits upon a few of the trees in their orchards, and taught them to prepare them for market at the Covent Garden. The result was a financial success to the growers, as the larger fruits fetched three times the price obtained for the inferior ones in their own market. Mr. Hutt's next move was to try and make England a new market for the Cape. His father being a market-gardener, he had some experience in packing fruits for Covent Garden Market. The growers were somewhat diffident in the matter, but after some persuasion he assisted them to pack three boxes of their best fruits as he had seen them packed at Clumber. One box was sent to Covent Garden, one box to the director of the Castle line of steamers, and one to some other representative person. Hence the beginning of the exportation of Peaches from the Cape. *J. Miller, Ruxley Lodge Gardens, Esher.*

TROPICAL FRUITS.—In last week's Home Correspondence in the *Gardeners' Chronicle* there is an interesting statement on this subject. It is so difficult to judge rightly by one's individual feelings or senses, for there are no two persons who see alike, smell alike, taste alike, hear alike, or feel alike. It is quite true that "judging from the samples of tropical fruit that come to this country," one can have no idea whatever of what really good tropical fruits are like. I once bought an Avocado Pear at one of the London shops for either two or three shillings, and I am sure I never tasted anything nastier! But it is quite a mistake to fancy that those things sold in the London shops are anything like the fruit one gets in tropical countries. My experience is mainly that of the fruits of India, and I declare that there is no finer fruit on earth than a good, ripe Mango. Of this delicious fruit

there are over a hundred varieties. At one time I was studying the Mango fruits, and native gentlemen who possessed Mango orchards used to send me samples of their choice and rare varieties; so I had an opportunity of tasting many a fine thing. There are Mangos almost as large as an ostrich-egg; others as small as a Plum. The best are those of the "Bombay section," of medium size, and, when ripe, of the consistence of butter in winter, and can be eaten with a spoon. It has been always a wonder to me that these fine varieties are never sent to London, for, like the Pear, the Mango admits of being ripened off the tree, better than on it. Those I tasted in London were of a most inferior kind, from Madeira or the West Indies, and would not be looked at in India. Some that I had studied, had the flavour of Nectarines, others of fresh good Figs, but most have a "sui generis" flavour that is not to be met with in either Orange, Grape, Peach, or anything else. Then I have much wondered why the red Banana (plantain) of Bombay has never, seemingly, been introduced into this country. There is nothing like it in all the range of Banana flavours. It is large and astonishingly good. The stumps or roots would travel any distance and vegetate. It is a tall plant with a red stem. Then again, the thin-skinned Pommello of Bombay, with a beef-red pulp, is a fine fruit of the Orange tribe. The Indian Custard Apple (*Anona squamosa*), when just ripe, cannot be compared to any other fruit; and it is distinct, and delicious. You cannot compare one fruit-flavour with another fruit flavour, any more than you can compare a horse with a camel, or Rhubarb with Celery; and it seems an absurdity to state that because we have Oranges, Grapes, Peaches, &c., we are not to have Mangos, Custard Apples, red Bananas, &c. Fruit-growing under glass is increasing in this country, and therefore I see no good reason why tropical fruit-trees should not be added to the long list of British fruits. They are distinct. One would hardly say that, because we have the Lily of the Valley, we do not need the *Lilium auratum*. With regard to Prickly Pears, there are to be had in Malta three of the finest things in the way of fruit, viz, the white-fruited, the yellow-fruited, and the red-fruited Prickly Pears (*Opuntia Ficus indica*). When fully ripe their flavour is unique, and cannot be compared with any flavour of English or other fruits, and it is simply delicious. The choice varieties are to be found only in private gardens. *E. Bonavia, M.D.; Sept. 13, 1897.*

THE LOQUAT.—In reply to Mr. Clarke's letter in your issue for September 4, we have a plant here which is quite thirty years old, and grows in a conservatory kept at a temperature of about 50° during the winter. The plant blooms about November, and produces fruit annually, but not a heavy crop, possibly because it blooms during sunless weather. The fruit ripens during spring, and resembles a small smooth orange, about 1½ inch in diameter. In flavour it is rather insipid, and not by any means desirable as a desert fruit. *George Harris, The Castle Gardens, Alawick.*

THE CARROT IN INDIA.

SIR GEORGE BIRDWOOD, to whose forethought India owes many of the good things of other climes, gives a very interesting account of the history of the Carrot in that great country, from which we take the following notes:—

"The Carrot would appear to have been continuously known in India from at least the time of the Great Akbar, the contemporary of Queen Elizabeth, and it has long been in cultivation as a garden crop throughout India; while in the Bombay Presidency it is not only cultivated by Europeans as a garden crop from imported English seed, but also widely, if irregularly, as a field crop by the native ryots, who use acclimatized seed,* originally obtained, if I remember

* The acclimatized seed is obtained in Western India by digging up the Carrot when its root has attained about one-third its full size, and cutting off both the root and the leaves, or "tops" (which are eaten as a *baaji*, or, as we say, "greens") of the plant within a couple of inches of "the crown of the root." The portion of the root remaining attached to the stalk is then deeply incised cross-ways and dipped in a strong compost of the mixed dung of the pig and buffalo and virgin-earth, the lateritious earth of the Deccan being preferred with a little *assafoetida* added, and as much liquid-manure as will reduce the mass to an adhesive paste. The roots are then, with the usual religious ceremonial, planted out and watered, and in due course produce strong flowering stems and large umbels of characteristically aromatic fruit.

rightly, from the Cape of Good Hope. It is sown in the 17th and 18th lunar asterisms during the months of November and December, and is reaped in the 22nd and 23rd during the months of January and February, yielding, usually, an abounding crop.

The plant is indeed found growing spontaneously in Cashmere, and on the Western Himalayas at elevations of from 3,000 to 9,000 feet above the sea level, and is probably indigenous to the region; Central Asia, from the Himalayas to the confines of Russia, appearing indeed to be the aboriginal habitat of almost all the immemorially familiar pot-herbs of the old world.

But as the plant is known throughout central and south-western Asia by its modified Greek name, *setyfin*, as well as by the name of *gacar*, one of the many eastern variants of its Sanskrit name *Garjara* (literally "grass," i.e., vegetation), it may possibly have been introduced into Cashmere by the Macedonian Greeks. The fact of the plant being found growing wild in the Western Himalayas, and of flourishing in India wherever it is cultivated, gives the strongest support to the opinion of Sir Edward Buck, that the cultivation of the Carrot as a field crop from improved European seed is capable of universal extension in India.

All the factors of success in Carrot cultivation are found over the greater part of India. The natural soil is nearly everywhere light and loamy, and easily dug, and penetrated by tap-roots to a great depth, and self-draining; and the conditions of climate permit of the seed being sown continuously from August 15 or 30 to November 15 or 30 (in Bombay to December 15), and of the roots being continuously cropped from end of November to the beginning of June. There is also, in normal seasons, sufficient rain for the seed times, while, as the plant is usually raised in India as a garden crop, or by *petite-culture*, artificial irrigation for it is always at hand. In view, however, of the gratifying results of the encouragement given in the last century by the Society of Arts to Carrot-growing in the United Kingdom, it is deserving of consideration whether the Government of India might not, with even greater public advantage, offer small prizes all over that country for the extended or improved cultivation of Carrots, as, indeed, of other quickly-maturing root crops; and this could be easily done either directly or through the intervention of the various provincial agricultural and horticultural societies with which the Indian Government is more or less responsively associated."

THE CREEPING SPECIES OF FICUS.

SEVERAL species and varieties of *Ficus* with the habit of that popularly known as *F. repens*, have recently been brought into cultivation, and are likely to find favour as garden plants. The last is *F. radicans* variegata, introduced by Mr. W. Bull and exhibited by him at the Temple show in May last, and again recently at a meeting of the Royal Horticultural Society, when it was awarded a First-class Certificate. A figure of this plant was published in the *Gardeners' Chronicle* last week.

The names of these plants are, however, somewhat puzzling. Thus *F. radicans* appears to be a garden name for a plant of which a flowerless specimen collected by Sir Joseph Hooker in Chittagong, and still unnamed, is in the Kew Herbarium. The name *radicans* had been given by Roxburgh to the species known to botanists as *F. rostrata*, which is quite distinct from *F. radicans* of gardens. This name may therefore be retained for the plant under notice, at any rate until it can be determined botanically. Some cultivators confuse this plant with *F. repens*, but the two are quite distinct in habit and leaf-characters. They may be distinguished as follows:—

F. RADICANS, Hort.—Stems creeping, smooth, wiry, green when young, dark brown when old, rooting freely, and bearing at intervals of about an inch alternate leaves with whitish stipules; petiole half an inch long; blade lanceolate, cordate at the base, 3 inches by 1 inch, bright green. An evergreen useful for covering walls, pillars, &c., in warm

houses. The variety variegata has leaves prettily marbled, and margined with milk-white.

F. STIPULATA, Thunberg.—This is the plant popularly known as *F. repens*, a smaller-leaved form of it being known as *F. minima*. It has ovate, obliquely-cordate leaves, from ½ to 1 inch long in its creeping or barren stage, and much larger lanceolate-cordate leaves in its tree or flowering stage. It is nearly hardy in England—quite hardy, in fact, in the south if planted against a south wall; one of the most useful plants for indoor gardening, filling as important a place there as the two species of *Ampelopsis* do out-of-doors. It is a native of Japan and China, where it is commonly cultivated. It has been in cultivation in England since 1771. In his recently-published monograph of the Indo-Malayan species of *Ficus*, Dr. King refers *F. stipulata* to *F. pumila* of Linnaeus, but for garden purposes the former name may properly be retained for the creeping or barren form of the plant.

F. FALCATA.—This is a species of recent introduction, which we owe to Messrs. H. Low & Co. It is of similar habit to *F. stipulata*, and is likely to prove as useful for clothing damp walls, &c., in warm houses. In the nursery of Messrs. F. Sander & Co. at St. Albans, there is a beautiful example of it on a wall in a stove, where it has grown very quickly in a somewhat shaded, moist situation. It is also planted as a wall-covering in the tropical fernery at Kew. The stems creep and root and branch quite as freely as *F. stipulata*, and the leaves are an inch long, obliquely oblong, with a slight curve, whence the name *falcata*; they are of a dark lustrous green colour, and decidedly attractive. According to Dr. King, this is a form of *F. punctata* of Thunberg, and is a native of the Malayan Peninsula and Archipelago, where it is not uncommon on trees and rocks. He describes it as "a very remarkable and beautiful species, varying much in fruit, and in the shape of the leaves, even in the same plant, the leaves on its small branchlets from the lower part of the main stem being often much smaller than those from branchlets near the apex, and occasionally different in form."

F. BARBATA.—This species is sometimes met with in large tropical houses, where it covers Palm-stems, pillars, &c., with long trailing shoots, bearing leathery ovate-oblong hairy leaves, about 6 inches long. It has long been an inmate of the Palm-house at Kew. It is a native of the Malayan Peninsula and Archipelago. To recapitulate, we have now the following creeping Figs in cultivation:—

F. barbata, Wall.
F. falcata, Thunb. (a form of *F. punctata*, Thunb.)
F. radicans, Hort. (not of Roxburgh).
var. *variegata*, Bull.
F. stipulata, Thunb. (the barren form of *F. pumila*, Linn.)

syn. *F. repens*, Hort.
var. *minima*, Hort.
I am indebted to Mr. W. B. Hemsley for assistance in identifying these plants. W. W.

COLONIAL NOTES.

THE BAHAMAS.

THE report of the Colonial Secretary of the Bahamas on the condition of the islands for the past year is, on the whole, satisfactory. The value of the imports last year was £194,774, and of the exports £139,000, the figures in both cases showing material increases over the corresponding returns for the previous year. The increase in imports took place in foodstuffs, cigars, coffee, corn, hay, wood, salt, meat, and bicycles; in exports, *Grasses*, *Tomatoes*, salt, sponges, turtle-shell, and logwood were all in larger quantities, while the production of *Sisal-fibre* was nearly doubled. After referring in detail to the various plantations of *Sisal* in the islands, the Colonial Secretary says:—"The prospects of this new industry are now becoming more defined, and, although it has absolutely failed to fulfil the anticipations once formed of it, there seems to be less reason to fear that it will die out altogether, and some reason to hope that it may in time become a small but well-established industry, returning fair profits to those engaged in it, and giving a much-needed variety to the colonial products, which at present are all included in the sponge and fruit trades."

SOCIETIES.

ROYAL CALEDONIAN HORTICULTURAL.

(Concluded from p. 191.)

THE TRADE EXHIBITS.—Without the substantial support afforded by the trade generally, the opening ceremony, and the show itself, would have been shorn of much of its more important features.

Messrs. JOHN DOWNIE & SONS, Edinburgh, furnished a great number of plants, the space occupied by their exhibits being 300 square feet. Messrs. DORRIS & SON, of Rothesay and Orplington, furnished a table of cut flowers measuring 60 feet in length, and 5 feet in width. Messrs. DICKSON & SONS, of Edinburgh, showed extensively; Messrs. FORBES & SONS, Hawick, exhibited a Jubilee table of cut flowers, fine collections of Hollyhocks, Pentstemons, Carnations, and other herbaceous plants. Messrs. FORBES & SONS made a most interesting exhibition of shrubby Phloxes, illustrating their evolution during the last century, from a poor needy-looking variety to the fine exhibits and high-coloured varieties of to-day. This firm were 1st for eleven spikes of Hollyhocks; and Mr. C. IRVINE, Jedburgh, was 2nd. Why eleven? Do the schedule framers believe that good luck is found in odd numbers?

In the gardeners' and amateurs' classes of Hollyhocks, the number of spikes of Hollyhocks required was five. Mr. OLIVER, Morpeth, an old Hollyhock fancier, being 1st in this class; Mr. BENNET, Tweedmouth, 2nd; and Mr. RICHARDSON, Peebles, 3rd.

There was also a class for six blooms of Hollyhocks, in which Mr. OLIVER was also 1st, and Mr. BENNET, 2nd.

In the class for twelve blooms, Mr. OLIVER was 1st; Mr. BENNET, 2nd; and Mr. G. HOOD, Edinburgh, 3rd. These Hollyhock exhibits were, as a whole, the finest and most promising I have seen for many years.

Messrs. DORRIS's stand, which covered 250 square feet, was backed with Palms, Ferns, and tall herbaceous plants of the choicest species and varieties, and furnished in front with show, fancy, Pompons, Cactus, and single-flowered Dahlias, some 200 varieties in all arranged in a striking manner, the whole being edged with flowers of their fine strain of French Marigold.

Messrs. R. B. LAIRD & SONS, Frederick Street, Edinburgh, had a large exhibit of various subjects arranged for effect, the one helping the other. Cut flowers of herbaceous plants were in great variety, forming an important feature of the group.

Messrs. THOS. METHVEN & SONS, 15, Princes Street, Edinburgh, had a table of Lilliums, double-flowered tuberous Begonias, Crotons, Caladiums, Crozy's Cannas in variety, Pancratiums, Palms, and Ferns, arranged as a ground-work to the group, which was artistically arranged. The whole was interspersed and brightened with Lilies in fresh condition, including *L. auratum*, *L. a. rubro-vittatum*, *L. a. platyphyllum*, and *L. lancifolium*.

Messrs. DICKSON & Co., 1, Waterloo Place, Edinburgh, had a large and bold table at the east end of the market. Along the centre of their tables were very good young pot-Vines, as well as fruiting Vines and Peaches in pots, arranged in place of the usual Palms. The fruiting Vines consisted of Lady Hutt and Apple Towers. Violas, new varieties of Picotees, and Carnations, the latter including Dowager Duchess of Athole (a white perpetual-flowering variety), Duchess of Fife (shell-pink), and others were shown. Hardy shrubs were represented by *Colutea orientalis*, *Prunus Pissardi*, *Hypericum Moserianum* var. *tricolor*, *Spirea Bumalda*, *Abies pungens* glauca *Kosteri*, and the Japanese Wineberry.

Mr. HENRY ECKFORD, Wem, Shropshire, staged a collection of Sweet Peas in many of the more interesting and newer varieties, which always create interest.

Messrs. DICKSON & Sons, 32, Hanover Street, Edinburgh, had a group of the more interesting and useful Conifers, arranged round the sides of the band stand. Some of the more showy were the Golden varieties of *Cupressus juniperus*, *Thuja* and *Retinospora*, and *Abies Parryana* glauca.

Messrs. JAMES GRIEVE & SONS, Redbraes Nursery, Edinburgh, had a table of choice Palms, Aspidistras, Dracenas, bronze and tricolor Pelargoniums, and New Zealand shrubby Veronicas in great variety for pot work. All these were brightened with such flowering plants as tuberous-rooted Begonias, single and double flowered; also choice Sweet Peas, Carnations, Violas, and choice herbaceous flowers. They also had a beautiful anchor of flowers.

Messrs. KERR BROS., Dumfries, exhibited a collection of new varieties of show, fancy, and Cactus Dahlias, and herbaceous plants. Mr. JAMES ROWATT, Glasgow, by Strathaven, staged Pentstemons, Phloxes, and China Asters in variety. Mr. JOHN PHILLIPS, Granton Road Nurseries, Edinburgh, had a table of *Araucaria excelsa* in plants of various sizes, interspersed and brightened with Lilies and Carnations, Ferns, Selaginellas, and other plants. Messrs. LAING & MATHER, Kelso-on-Tweed, had a table of the new hybrid continuous-flowering Chrysanthemum Princess May. They had also a fine lot of their popular Carnations, including the new self, Viscountess Melville. The Chrysanthemum is quite hardy, and has been flowering outside and inside for eighteen months.

Mr. A. FINDLAY, Markinch, Fifeshire, showed a table of new varieties of Potatoes, including Klondyke, said to be the earliest variety in cultivation. They may be dug eight weeks from the time of planting.

Messrs. SCARLETT BROS., Musselburgh, had a fine table of vegetables and herbs, including Vegetable Marrows, Cabbages, Cauliflowers, Scarlet Runners, &c.

Mr. MICHAEL CUTHERBERTSON, Rothesay, N.B., had a table of alpine plants in pots, including about seventy species and varieties of Saxifrages; also a collection of Sedums and Sempervivums. He also had cut flowers of herbaceous plants, conspicuous amongst which was a collection of Montbretias, new Phloxes, Lemoine's hardy Gladioli, and the new Rudbeckia Golden Glow.

Mr. HUGH HANAN, 9, Bank Street, Edinburgh, had a fine collection of Sweet Peas in seventy varieties. On his table were long flowering stems of *Tropaeolum speciosum*, and growths of *Smilax*.

Mr. A. LISTER, florist, Rothesay, N.B., had a collection of Sweet Peas, Carnations, Pentstemons, Dahlias, herbaceous plants, and Pansies, elevated to a high ridge along the centre of the table, making a very pleasing and effective exhibit. A new Dahlia, named Jeannie Alister, is a single Cactus variety of a new shade; and Lister is a purple variety with pointed petals.

Messrs. FORD & Co., glass manufacturers to the Queen, 39, Princes Street, Edinburgh, had an exhibit of the latest table decorations, rustic glass, tastefully arranged en suite, in tubes, flower-stands, and bowl centres.

Hydrangea paniculata, *Gladioli*, *Lilium Harrisii*, and other flowering plants lightened up the Palms, Ferns, and *Araucaria excelsa*, all of which were arranged in tiers that were shown by Messrs. M. TODD & Co.

THE OPENING.

The ceremony of formally opening the Show took place at 1 o'clock on the first day, when the Marquis of LOTHIAN, President of the Society, delivered the inaugural speech, in presence of a considerable gathering of spectators, including the Earl of Morny, Lord Provost, Sir Andrew McDonald and Lady McDonald, General Hope, Sir John Cowan, Professor Annandale, Professor Bayley Balfour, Members of the Town Council, and other gentlemen.

DERBY.

SEPTEMBER 8, 9.—The thirty-sixth annual exhibition was held in conjunction with the agricultural show on the above dates, and was a great advance on any that have preceded it, due probably to some important alterations that have been made in the schedule and in the management of the show, which induced more cultivators to compete in many of the classes.

GROUPS.—The principal features were the fine groups of plants filling the central portion in a circular tent, the eight competitors following the improved style of arranging their plants, and there was nothing to mar the uniformity of the whole. All the groups were good, and any one of them would have been 1st at an ordinary show, thus giving the judges no light task to make their awards. Eventually Mr. Ward, gr. to T. H. OAKES, Esq., Riddings House, Alfreton, was placed 1st for good culture as shown by the plants, and for graceful arrangement of them. His Crotons were very fine examples as regards the colour and size of the foliage, and they were well contrasted with *Ixoras*, *Lily of the Valley*, a variety of *Orchids*, *Cocos*, and other Palms, the whole of the pots being hidden with moss. Mr. MEE, of Nottingham, was 2nd, with a very prettily-arranged group, containing good Crotons, Palms, *Acalyphas*, some good potulds of *Nertera depressa*, and good plants of *Nepenthes* prettily arranged over a small pool of water, the whole forming a very pleasing combination. Mr. CYPHER, of Cheltenham, was 3rd; his group was specially noticeable for the fine lot of *Dendrobiums* arranged on branches of virgin cork, also for several fine pieces of *Odontoglossum*, &c. This group contained the best flowers, but it lost points in arrangement.

Messrs. VEITCH & SONS staged a splendid group of plants, not for competition, containing many of the fine-foliage Caladiums for which the firm is noted; also some of their improved varieties of greenhouse Rhododendrons, a beautiful specimen of *Dayallia Veitchii*, and some fine specimens of *Nepenthes*, the whole being tastefully arranged with various Ferns, *Bouvardias*, hybrid *Streptocarpus*, and the fine winter-flowering *Begonia Gloire de Lorraine*. For this group they were awarded a Gold Medal.

DECORATIVE DESSERT TABLE.—Mr. GOODACRE, of Elvaston Hall Gardens, won the 1st prize against three other exhibitors, with a nice collection, containing Queen and smooth Cayenne Pine apples, excellent Muscat of Alexandria and Gros Maroc Grapes, Hero of Lockinge Melon, two grand dishes of Peaches (Sea Eagle and Golden Eagle), and a dish of Gasconne's Seedling Apple, &c. The floral decorations of this table consisted of *Orchids*, *Asparagus plumosus*, *Smilax*, &c.; 2nd, Mr. WARD, gr., Riddings House, who staged a very fine Queen Pine, dishes of good Grapes, Peas, &c., set off by a graceful arrangement of flowers and foliage.

FRUIT.—In the fruit classes some very fine bunches of Barbarossa Grape were staged by Mr. McCulloch, who took the 1st prize; the 2nd going to Mr. McVinish, who staged medium bunches of Madresfield Court. In the class for three bunches of Muscat of Alexandria, Mr. GOODACRE was well to the front with capital examples; 2nd, Mr. McVinish, Lockington Hall.

CUT FLOWERS.—Mr. JENKINSON, Newcastle, Staffordshire, won the premier position with various *Orchids*, *Roses*, *Carnations*, *Cactus Dahlias*, *Lilies*, *Gloriosa superba*, and other flowers, set out tastefully against a dark background, and

relieved with shoots of *Asparagus plumosus*, Fe 2nd, Mr. CYPHER, who staged *Orchids*, *Asparagus*, &c.

MISCELLANEOUS.—Silver Medals were awarded GOODACRE for a fine group of *Begonias* and *Ferns*; FINCH for a similar exhibit; to Mr. WHITE, Worcester collection of herbaceous flowers, *Dahlias*, &c., which *Colchicum speciosum caucasicum* was especially to Mr. DEVERILL, Banbury, for a fine collection of his flowers, *Dahlias*, &c.

Cactus and other Dahlias were excellently staged by Messrs. CHEAL, of Crawley (Bronze Medal).

VEGETABLES were remarkably good. The chief prize taken by Mr. McVinish, gr., Lockington Hall; Mr. gr., Bretby Park; and Mr. WOODGATE, gr., Rolleston. The amateurs' and cottagers' classes contained some fine specimens, the competition in some instances very keen.

WELLINGBOROUGH AND MIDLAND COUNTIES DAHLIA.

SEPTEMBER 11.—This was the second exhibition, and such a remarkable advance upon that of last year's permanence is assured. The open classes attracted leading growers—trade and amateur—from the south if the majority of the leading prizes were carried off by them yet exhibited blooms of such fine character, valuable object lessons, which will be learned by growers. The takings at the doors denoted an interest in the exhibition, and it is probable it will be two days' show in the future.

There were nine entries in the class for twenty-four ties, and equal 1st prizes were awarded to Messrs. J. T. FARMAN, Farnham, Surrey; and Mr. G. HUMPHRIES, Chesham. A few of the best blooms in these two stands mentioned:—Perfection, J. B. Service, John Hickling Gladstone, Shottesham Hero, Glow-worm, Arthur R. Duke of Fife, W. H. Williams, Frank Pearce, Lordford, Mrs. Langtry, William Rawlings, Miss Florence Tranter, James Stephens, Henry Walton, a Fox; Mr. J. T. WEST, Cornwallis, Brentwood, Wash. Mr. J. R. TRANTER, Henley-on-Thames, 3rd, with ten stands. With twelve varieties Mr. MORTIMER was 1st.

The practice of exhibiting Cactus blooms on show as in the case of the show varieties, is followed at Wellingborough. Mr. MORTIMER, and also Mr. WEST, set up fine stands of twenty-four distinct blooms each, an advantage rested with Mr. MORTIMER, closely pressed WEST. Such varieties as J. E. Frewer, Princess Beatrice, Gloriosa, Wm. Stradwick, Starfish, Mrs. L. Se Matchless, delicate, Cycle, Mrs. G. Sloane, Cassar, Ruby, Island Queen, Ethel, and Octopus were seen as best.

Messrs. MORTIMER and WEST were also 1st and 2nd twelve varieties.

Mr. WILLIAM BAXTER, florist, Woking, had the best varieties, three blooms in a bunch, fine in quality, admirably set up; and Mr. J. WRIGHT, nurseryman, Woking, had the best twelve bunches of Pompons, a little in size, but nicely set up on wire frames.

There were several classes for amateurs, open to all. Mr. R. BURGIN, St. Neots, taking the leading prize show and fancy Dahlias; and Mr. H. A. NEESE, V for Cactus and Pompons, staging in admirable style. Certificates of Merit were awarded to new varieties.

FRUIT.—Some classes were set apart for fruit. Six dishes came from Mr. HAYES, The Gardens, Castle.

The best two bunches of Grapes, well-finished, Hamburg, came from Messrs. CLAYTON & SON, Wellingborough.

Miscellaneous collections of Dahlias were shown by GREEN, Norfolk Nursery, Dereham, and others; and fine Apples were contributed by Messrs. H. and E. nurserymen, Wellingborough.

MANCHESTER AND NORTH ENGLAND ORCHID.

SEPTEMBER 9.—At this season the number of Orchids which flower is comparatively few, but this is made up by the fine quality of those which do flower. The best were present:—G. SHORLAND BALL, Esq., Ashford, chair; and Messrs. S. GRATRIX, E. J. Sidebotham, Dr. Kinson, J. Cypher, W. A. Gent, J. Anderson, Wm. S. A. Warburton, H. Greenwood, R. Johnson, Jas. Back and Wm. Bolton.

S. GRATRIX, Esq., Whalley Range (Mr. R. McLeod, gr. *Cypripedium bellatulum album* (First-class Certificate), clean flower, which gains in whiteness after a day's sun. It is an exquisite variety, and received an Award. The same exhibitor showed *Laelia praestans*, flower with bright segments, and a lip of a bright tint, but with a centre that was blotched with white, was no improvement. It received an Award of Merit.

A. WARBURTON, Esq., Vine House, Haslingden (gr. *Lophouse*), exhibited a fresh, well-grown plant of *Cidium insigne* Laura Kimball, which, although it was awarded in London, was here awarded a First-class Certificate. It was the first of the yellow *C. insigne* that has come to this Committee, and it has improved on acquisition.

although there were experts who had doubts of its maintaining equal rank with *C. insignis* Sandere.

THOMAS STATTER, Esq., Stand Hall, Whitefield (gr., Mr. R. Johnson), exhibited a lot of good Orchids, foremost among them being *Cypripedium* *x* *triumphans*, a variety that is undoubtedly the most brilliant of its class, and it is no disparagement to the others of the class to say that among varieties of the *C. crenatum* superbum it is the best. Its form is possibly not so perfect as one would like, but its brilliancy and the features derived from *C. Salteri*, make it a pretty flower. Th's exhibitor showed *Lælio-Cattleya callistoglossa* (Award of Merit), a fine hybrid with a showy lip, and the other parts of the flower tend to make it a desirable variety. *Lælia elegans* *Cheloniensis* was given an Award of Merit, due probably to the brilliant colouring of the lip, for the flower itself is too small for the present taste in these plants. *Cypripedium* *x* *Memoria Moensii* obtained an Award of Merit—we have seen it much better; also *Cattleya Parthenæ*.

Messrs. H. Low & Co., Clapton, had a magnificent plant of *Lælia elegans* *Cawenbergii*. It is a striking plant, with the flowers in close order on the flower-spikes. The rich purplish-crimson lip, adorned with a peach-like tint, took the eye of the committee, although they stopped short of voting it a First-class Certificate, and it received a Cultural Commendation and an Award of Merit instead. The same firm also presented *Cypripedium* *x* *Alfred Hollington*, which has already been described in these pages. It received an Award of Merit. The same award was meted out to *Cattleya Murrucæ* = *C. Harrisoni* *x* *C. gigas*.

J. LEMANN, Esq., West Bank House, Heaton-Mersey (gr., Mr. Edge), showed *Anguloa eburnea*; it is an old favourite that is now seldom seen. The flowers were developed to perfection, and the plant received an Award of Merit. The same exhibitor had also a fine plant and variety of *Cattleya aurea*, with an extra broad lip, nearly wholly of crimson-purple, with faint threads of gold throughout.

E. J. SIDEBOTHAM, Esq., Erisden (Mr. Shiner, gr.), had the finest *Cattleya speciosissima* yet submitted to the committee (Award of Merit). The segments were full and unusually well-formed. It was described in full in *Gardeners' Chronicle*, 1896, and of the two in flower, called A and B, the best was the A variety, although, in our opinion, it was not so well developed as last season.

Mr. JAS. CYPHER, nurseryman, Cheltenham, was voted an Award of Merit for a novel lemon-coloured *Oncidium Jamesianum* distinct from the type.

Wm. THOMPSON, Esq., Walton Grange, Stone (Mr. Stevens, gr.) showed a group consisting of *Odontoglossum crispum*, comprising self coloured and spotted varieties along with *O. tripudians*, the showy *Masdevallia Veitchiana* of the better type, and several other species, for which the Committee awarded a Silver Medal.

BIRDS USEFUL TO GARDENERS AND FARMERS.

THE KESTREL OR WINDHOVER (*FALCO TINNUNCULUS*).—This beautiful and valuable bird is often wantonly killed either for the sake of shooting at something wild, and the pleasure of seeing it stuffed and set in a glass-case, or because of an exaggerated idea on the part of gamekeepers that it is a systematic destroyer of young partridges and pheasants, grouse, hares, and rabbits.

The wholesale destruction of such birds as the kestrel is frequently the main cause of abnormal and sudden attacks upon crops by animals and insects. In favourable conditions of climate and other circumstances, and in the absence of the checks provided by nature against their undue increase, certain animals multiply exceedingly, and do infinite harm, as was exemplified by the serious injury occasioned to grass-land in parts of Scotland by voles in 1892. Insects also appear more frequently and in larger numbers in these later days, owing in a degree to the destruction of birds, their natural destroyers. As an example, it may be observed that the enormous decrease in the number of swallows on account of their alleged destruction in their winter quarters, has, it is fully believed, been one cause of the increased swarms of aphides which now come upon the Hop plants regularly every season. In their migration from the Plum and Damson trees, and other trees of the *Prunus* tribe, these insects were formerly cleared off by the swallows. Now, swallows are so reduced in numbers that they have little influence upon this and other insect attacks.

The kestrel prefers animals of the mouse tribe to all other forms of food. Yarrell, in his *History of British Birds*, says, "Mice certainly form the principal part of the food of this species." It also feeds on beetles, especially cockchafers and wireworms (the larvae of click-beetles), and frogs. When it cannot

get mice it will occasionally take very young birds, as pheasants, partridges, and grouse, but according to all observers it preys chiefly upon mice and insects; and in the report of the Departmental Committee, appointed by the Board of Agriculture to inquire into a plague of field voles in Scotland in 1892, it is stated that the food of the kestrel is known to consist almost exclusively of mice, grasshoppers, coleopterous insects, and their larvae.

Keepers do not always discriminate between hawk and hawk; and because other hawks, as the sparrow-hawk, for instance, take young game-birds wholesale, it is often erroneously concluded that the kestrel is equally an offender in this respect. In the report referred to above, it is observed, in connection with the question of the kestrel's habits, that it is rare to find people able to distinguish between one kind of hawk and another. Few of the witnesses who gave evidence before the Departmental Committee were able to describe hawks' otherwise than as red, blue, brown, or yellow, and it was often found impossible to make out what species they intended to indicate.

The identification of the kestrel is easy on account of its practice of hovering in the air, without motion, for a long time. Its graceful flight is also different from the rapid dashes of the sparrow-hawk. It is about 15 inches from head to tail, the female being slightly smaller.

Copies of this leaflet can be obtained free of charge and post-free on application to the Secretary, Board of Agriculture, 4, Whitehall Place, London, S.W. Letters of application so addressed need not be stamped.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

DURING the present month the plants should receive a good deal of feeding; but this, like everything else, needs a little care. Many good-looking plants get spoiled by indiscriminate and excessive feeding, which ruins them at flowering time, and lets in a gardener, say, at an exhibition, whose plants were at one time rather insignificant-looking. The best sorts of manure are the voidings of animals, such as those of the stall-fed ox, horse, and sheep, changing these from week to week, and affording clean water occasionally, as a change and to sweeten the soil, remembering that the plants may have a surfeit of good things. Another matter to attend to is the getting of the wood well matured, and to do this the plants must stand in the full sunshine the entire growing season, and not be fed too lavishly, or the shoots will be so gross and sappy, that no amount of autumn sunshine will ripen them.

Obituary.

MR. JAMES COCKER.—Many will hear with regret of the death of Mr. J. Cocker, the senior partner in the Aberdeen firm of Messrs. Cocker & Sons, nurserymen, of that town. His death took place at Sunnyside, Aberdeen, in the sixty-fourth year of his age. A brief account of the life of the deceased will appear in these columns shortly.

VARIORUM.

HOW TO DESTROY SCALE, &c.

WE hear of all sorts of remedies for scale, but none is so good as the old one of white-washing the trunk and limbs of, say, a Plum, Pear, Orange, or Fig-tree. If there are many small shoots that require removal, see that this is done before the lime-washing takes place. *Nerium Oleander* is apt to be badly infested with white scale, and a lime-wash applied in the winter will remove these.

Applied to the stem and limbs of orchard-trees, it clears them of moss and lichens, although æsthetic folk may not admire the appearance of the trees so treated, and will contend that less unsightly means might be taken to kill the moss, &c. The chief thing, however, is freeing the trees from the parasitic growths, and maintaining them in good condition. We have seen it stated that lime-washing will destroy mealy-bug, but we have our doubts.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	Above (+) or below (−) the Mean for the week ending September 11.	ACCUMULATED.				No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.				
1	5	48	6	+ 166	− 3	7	155	26.7	46
2	6	54	9	+ 26	+ 21	5	143	21.1	43
3	6	57	0	+ 108	− 78	2	130	17.6	28
4	4	78	0	+ 201	− 119	2	127	16.5	40
5	4	71	0	+ 147	− 115	1	128	20.1	36
6	4	92	0	+ 246	− 180	3	119	30.0	32
7	5	58	3	+ 85	− 17	6	154	30.5	49
8	5	66	0	+ 154	− 92	5	144	23.9	43
9	4	81	0	+ 217	− 138	8	151	31.2	39
10	4	64	0	+ 20	+ 8	5	165	29.3	50
11	3	82	0	+ 146	− 57	2	159	31.7	43
12	2	111	0	+ 333	− 80	10	160	25.6	35

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W. 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending September 11, is furnished from the Meteorological Office:—

"The weather continued very unsettled and rainy during the earlier days of the week, but subsequently became fine and dry in all parts of the kingdom.

"The temperature was again below the mean, the deficit being as much as 4° or 5° in most parts of the country, and 6° in 'England, N.E.' and 'Scotland, E.' The highest of the maxima were recorded, as a rule, on the 11th, and varied from 69° in the 'Midland Counties,' 'England, S.' and 'Ireland, S.' to 61° in 'Scotland, W.' and 'England, N.W.' The lowest of the minima, which were registered towards the end of the week, ranged from 29° in 'Scotland, E.' 30° in 'Scotland, N. and W.' and 32° in the 'Midland Counties' and 'Ireland, N.' to 40° in 'England, S.' and to 49° in the 'Channel Islands.'

"The rainfall exceeded the mean in 'England, E. S., and S.W.' and the 'Midland Counties,' as well as in 'Ireland, S.' and the 'Channel Islands;' in other districts, however, there was a deficit. The fall in 'England, S.W.' and the 'Channel Islands' was again very heavy.

"The bright sunshine exceeded the normal in Ireland, Scotland, and 'England, N.W.,' but was deficient in most other parts of the kingdom. The percentage of the possible duration ranged from 50 in 'Ireland, N.,' 49 in 'Scotland, W., and 46 in 'Scotland, N.' to 32 in 'England, S.' and 23 in 'England, N.E.'"

MARKETS.

COVENT GARDEN, SEPTEMBER 16.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly very Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, Dessert, in variety, p. bush. 8 0-10 0	Melons, each ... 0 9-1 6
— Culinary, in variety, per bush. 3 6-5 0	Mulberries, per gal. 1 6 —
Blackberries, peck 2 6-3 0	Nectarines, selectd. fruit, per doz. 6 0-8 0
Damsons, 4-bushel 7 6 —	— Medium, p. doz. 3 0-4 0
Figs, per doz. ... 1 0-2 0	— Seconds, p. doz. 1 6-2 0
Grapes, Gros Colmar, per lb. ... 1 6-2 0	Nuts, Cobs, per lb. 0 3-3 1
— Gros Maroc, lb. 1 0-1 6	— Filberts, per lb. 0 2 —
— Alicante, p. lb. 1 0-1 3	Oranges, S. Australian, p. case, containing 120 fruit 10 0-12 0
— Hamburgs, selected, per lb. 1 0-1 6	Peaches, selected fruits, per doz. 6 0-8 0
— 2nd quality, per lb. ... 1 0 —	— Medium, p. doz. 2 6-3 0
— Muscats, "Canon Hall," p. lb. 2 0-4 0	— Seconds, per dozen ... 1 6-2 0
— Channell Islands per lb. ... 0 6-0 9	Pears, various, per bushel ... 4 0-10 0
— Muscats, selected, per lb. ... 2 0-2 6	— small, bush. 2 0-3 0
— Muscats, 2nd quality, per lb. 0 9-1 3	Pine-apples, St. Michael, each ... 5 0-8 0
	Plums, Ordinary, in variety, 4-bush. 4 0-6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, 12 blooms ... 3 0-6 0	Marguerites, per 12 bunches ... 2 0-4 0
Asters, 12 bunches 3 0-6 0	Mignonette, per doz. bunches ... 2 0-4 0
Bouvardias, per bunch ... 0 4-0 6	Myosotis, or Forget-me-Not, 12 bunch 1 6-3 0
Carnations, pr. doz. blooms ... 0 9-2 0	Orchids:—
— per doz. bun. 4 0-6 0	Cattleya, 12 blms. 5 0-12 0
Chrysanthemums, p. doz. blooms ... 0 6-2 6	Odontoglossum crispum, 12 blms. 2 0-4 0
— p. doz. bunches 3 0-6 0	Pelargoniums, scarlet, per 12 bun. 3 0-4 0
Corndflowers, per Dahlias, 12 bunches 3 0-6 0	— per 12 sprays ... 0 4-0 6
Eucharis, per dozen 2 0-4 0	Pyrrethrus, 12 bu. 1 6-2 6
Gardenias, per doz. blooms ... 2 0-4 0	Roses, Tea, per doz. — yellow (Pearls), per dozen ... 1 6-4 0
Gladioli, various, per doz. bunches 6 0-18 0	— red, per dozen 0 9-1 0
Lilium Harris, per doz. blooms ... 2 0-4 0	— pink, per doz. 1 0-2 0
— Lancifolium, per doz. blooms 1 0-2 0	— Safrano, p. doz. bunches ... 2 0-6 0
Lily of the Valley, dozen sprays ... 1 6-2 6	Roses, per dozen bunches ... 2 0-6 0
Maidenhair Fern, per 12 bunches ... 4 0-8 0	Sprays ... 2 0-2 6
	Tuberose, 12 blms. 0 3-0 4
	Violets, 12 bunches 1 6-2 0

ORCHID-BLOOM IN VARIETY.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Evergreen shrubs, in variety, doz. ... 6 0-24 0
Aspidistras, per doz. 12 0-30 0	Ficus elastica each 1 0-7 6
— specimen, each 5 0-15 0	Ferns, small, doz. ... 1 0-2 0
Asters, various, per doz. ... 2 6-5 0	— various, doz. 5 0-12 0
Chrysanthemums, p. doz. pots ... 5 0-9 0	Foliage plants, doz. 12 0-36 0
— specimen, or large plants, ea. 1 6-2 6	Fuchsias, per doz. ... 4 0-6 0
Coleus, per doz. ... 2 0-4 0	Heliotropes, dozen 3 0-4 0
Dracenas, each ... 1 0-7 6	Liliums, various, per dozen ... 9 0-12 0
— various, p. doz. 12 0-24 0	Marguerites, p. doz. 6 0-9 0
Erica, various, per dozen ... 9 0-18 0	Mignonette, p. doz. 4 0-6 0
	Palms, various, ea. 2 0-10 0
	— specimens, ea. 10 6-84 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. ... 2 0 —	Mushrooms (Indoor) per lb. ... 0 6 —
Beans, French, per bushel ... 5 0-6 0	— (Outdoor), half-bushel ... 2 6-3 0
— Scarlet Runner, per bushel ... 4 0-5 0	Salad, small, per doz. punnets ... 1 6 —
Beetroot, p. bush. 1 9-2 0	Shallots, per lb. ... 0 2 —
Cauliflowers, dozen 2 0 —	Sprouts, per 4-bush. 3 0 —
Cucumbers, home-grown, selectd., per doz. ... 2 0-3 0	Tomatoes, selected, per doz. lb. ... 3 0-3 6
— 2nds, per dozen 0 9-1 0	— Medium, do. ... 2 0-2 6
Garlic, per lb. ... 0 2 —	— Seconds, do. ... 1 0-1 6
Marrows, per tally 5 0-6 0	— Channel Islands, per lb. ... 0 2-0 3

POTATOS.

With moderate supplies of Potatoes, prices rule as follows:—Hebrons and Snowdrops, 75s. to 90s.; Giants, 70s. to 80s.; Blacklands, 60s. to 65s.—John Bath, 32 and 34, Wellington Street, Covent Garden, W.C.

SEEDS.

LONDON: Sept. 15.—Messrs. John Shaw & Sons, Seed Merchants, of Great Malte Pond, Borough, London, S.E., write that retail sowing orders for Trifolium are still coming to hand; very little seed will remain over unsold. The sale for Mustard and Rape seed continues slow. Winter Tares of excellent quality are now obtainable for very little money.

The Rye-market is steady. Peas and Haricots meet an improved demand at values favouring holders. The inquiry for Canary and Hempseed is small. There is no change in Linseed. The new English Longpods show good quality. Alsike and Trefoil attract some speculative attention.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending September 11, and for the corresponding period of 1896, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

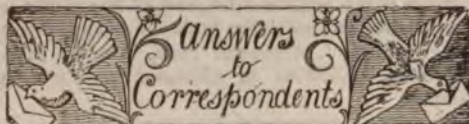
Description.	1896.	1897.	Difference.
	s. d.	s. d.	s. d.
Wheat	23 9	33 1	+ 9 4
Barley	23 4	27 4	+ 4 0
Oats	14 1	17 3	+ 3 2

(Markets carried over to p. ix.)

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

WESTWOOD.—There is an apparatus heated by an oil-lamp, and used for purposes of propagation of plants. Can any of the readers of the *Gardeners' Chronicle* indicate the name of the firm which supplies such apparatus?



BOOKS: *F. P., Cambs.* We imagine that you require a book treating of the chemistry of soils—not gardening. You should obtain Dr. W. Frearm's *Soils and their Properties*—one of Bell's Agricultural Series—price 2s. 6d. (Bell & Sons, York Street, Covent Garden, W.C.)

CHRYSANTHEMUM LEAVES DISEASED. *R. E. T.* The green resinous colouring matter has entirely disappeared, but how? And in lack of more precise information as regards your method of culture, manures used, &c., and more abundant material, we are unable to advise. That the plants affected cannot produce good flowers is certain.

CORRECTION, GLASGOW SHOW.—The exhibit of Pentstemons and Hollyhocks erroneously credited by our reporter to Messrs. Dobbie & Co. were exhibited by Mr. C. Irvine, of Jedburgh.

GRAPES: *C. S.* The berries sent are attacked by the minute fungus, *Glaeosporium laticolor*. Cut out and burn every affected berry, for there is no known cure.

HIBISCUS: *W. L. H.* Some greenhouse and warm-house species, as *H. Trionum*, may be increased from seed, and all of them may be struck in a warm frame over bottom-heat, or in a case in the propagating-house in the spring, the cuttings being taken from plants that have been forced into growth. *H. syriacus* (*Althea frutex*), a hardy shrub, grows well from seed, which ripens in this country in warm seasons. Layering of the best varieties of *H. syriacus* is advisable, and cuttings may be struck, cool, under bell-glasses, but it requires much patience on the part of the propagator.

NAMES OF FRUITS: *J. C.* The slight boxes containing Plums were partially smashed, and the fruit much damaged.—*A. B. W.* Fondante d'Automne.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Anxious.* *Cineraria acanthifolia*, a silvery-leaved plant that is to be preferred to *C. maritima*, but not as easy to propagate. It is a variety that does well when established.—*A. D. L.* The little yellow *Odontoglossum* appears to be the typical *O. odoratum*, a very variable species. The other is *O. ramosissimum*.—*T. I. & Sons.* *Clematis flammula*.—*T. L.* *Hippophae rhamnoides* (Sea Buckthorn).—*A. G. L.* 1, *Solidago serotina*; 2, *Helianthus rigidus* var. *Diana*; 3, *Helianthus rigidus*; 4, *Helianthus multiflorus maximus*; 5, *Helianthus giganteus*; 6, *Chrysanthemum uliginosum*.

NARDINA DOMESTICA: *Fr. de Lact.* A greenhouse-shrub of easy culture, thriving in sandy-peat and

loam, with much the same kind of culture as that which is found to answer with the *Camellia japonica*. Cuttings of ripe shoots strike readily in sand under a hand-glass without bottom-heat.

PERFUMES, ESSENTIAL OILS: *E. C. H.* The article enquired for appeared in our issue for May 1, 1897, p. 283. The date of the Consular Report, upon which the article was based, we are unable to furnish; but, doubtless, Mr. Jackson would be able to do so. We have no record of the experiment in "Wallflower-culture for Perfume-purposes in Lincolnshire." Much of the kind of information that you require is furnished by Mr. G. W. S. Piesse in his *The Art of Perfumery*, published by Longmans & Co.; and much may be gleaned from Maiden's *Useful Native Plants of Australia*. There is a very large amount of information in the *Gardeners' Chronicle* as to the cultivation of perfume-plants at home, but time fails us to hunt for it. As you are seeking for information concerning flower-production in the colonies, they ought to be able to assist you at the Imperial Institute, South Kensington; and at the Royal Botanic Gardens, Kew.

PLAN OF A MAZE: *H. J. C.* A plan appeared in these pages on February 10, 1849, the same being reproduced in the issue for March 5, 1892. It was taken from *The Theory and Practice of Gardening*, by John James, 1712.

R. H. S. JOURNAL: *W. L. H.* The *Journal* appears more than once a year. You should apply to the Secretary, 117, Victoria Street, Westminster.

SEEDS: *H. C.* We have no knowledge of white-flowering plants having seeds of a low degree of vitality; their seeds, as a rule, vegetating as freely as those of plants having coloured flowers. There is nothing in your statements in regard to these matters.

SETTING OF CUCUMBER BLOSSOMS: *G. H.* Had you furnished us with the necessary particulars as regard to your management of the plants, the question you put to us would have been less of the nature of a conundrum. We are glad, however, that you have discovered the reason that the blossoms failed to "set."

SKIN ERUPTION SUPPOSED TO BE CAUSED BY SPERMANNIA AFRICANA: *W. E. H.* We have no knowledge of any ill effects arising from the contact of the skin with the leaves, shoots, &c., of this plant. Perhaps some of our readers would kindly give their experiences.

SMILAX OFFICINALIS: *Fr. de Lact.* This name is given to three or four different species of *Smilax* by many different authorities. Most *Smilaxes* are hardy in the temperate zone, and present no difficulties in their cultivation. They prefer a sandy-loam, good drainage, not much manure, and a sunny aspect.

TUBEROUS-ROOTED BEGONIAS: *L. S.* Very large high-coloured varieties, but not differing greatly from scores of others found in gardens. Whether they are adapted for bedding-out will depend on the pose of the flowers, habit, &c. of which these sent do not allow us to form an opinion.

COMMUNICATIONS RECEIVED.—Subscriber.—*C. Rookell*.—*C. Best*.—*St. Andries*.—*Roberts*.—*W.*.—*Jas. Hughes*.—*I. R.*.—*S. N.*.—*W. J. B.*.—*T. K.*.—*Protheroe & Morris*.—*A. R. S.*.—*J. Backhouse & Sons*.—*M. C. Z.*.—*Z. W. D. H.*.—*F. S. G.*.—*J. W. W.*.—*G. T. K.*.—*C. & Co.*.—*J. B. Davy*.—*California*.—*M. T. M.*.—*J. B.*.—*Bailey Waddis* (many thanks).—*D. H. W.*.—*E. C. G.*.—*S. J.*.—*G. W.*.—*R. D.*.—*Harrison*.—*W. J. Anderson*.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the pleasure of announcing that the circulation of the "*Gardeners' Chronicle*" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "*Chronicle*" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 25, 1897.

LAMPOR T.

THE practised observer of British domestic horticulture is occasionally the witness of features in a particular garden that are unique. He notes the result of certain methods of culture, differing absolutely from those to be found in any horticultural manual; they are, in fact, original in conception, and consequently peculiar to the place.

Sometimes it means merely that as travellers adopt various routes to one and the same place, so have different means been adopted to obtain the results sought for. Less frequently the cause is a deeper one, since a novel ideal is sought—perhaps one that numbers would unhesitatingly declare to be nothing more nor less than eccentric horticulture. Be that as it may, the probability is, that a garden which presents such deviations from the beaten road is one that will afford the visitor most interest, and will remain longest in his memory.

Such a place is Lamport Hall, an old manorial residence in Northamptonshire, 'twixt the county town and Market Harborough. It has been the home of the Isham family for upwards of three centuries and a half, and of the present Baronet Sir Chas. Isham for more than seventy years, for fifty of which he has exerted a controlling influence over many characteristics of the garden.

To know with what interest he has done this, how far he has succeeded in realising his own ideals—some of them remarkable ones, it is necessary that one should visit the place, and, under Sir Charles' own guidance, see his bowers of Box-trees, his rockery, or his walls beautifully clothed with vegetation, and hear, as we did, the theory or the reason that suggested the construction of the objects in each instance. But that is not possible to all, and the purport we have in writing this note is to convey some idea of the garden, and indicate the reasons for certain methods that have been pursued, which, however, it would be unorthodox to recommend. First, then, we may refer to—

THE ROCKERY,

the most unique spot in the garden, and one wherein have been concentrated most of Sir Charles' interest and personal work. It may be said at once that its claim to notice does not rest upon the size, for it is small, and the fact of being small may have suggested its style and character. In construction it differs widely from any rock-garden that we have seen. Sir Charles himself says, anent a rockery:—"It should exhibit a combination of opposite extremes, the utmost wildness of construction, with the highest cultivation. It should be trained that the crevices remain open to produce an effect of light and shade." Here is given, in the constructor's own words,

his idea of what he would like to produce. The highest point in the structure, and it may be seen in the centre of fig. 64, is 24 feet, and is topped by a few feet of Tree-Ivy, consequently, though miniature in area, its height is altogether unusual. Standing in front, the rockery describes an imperfect half-circle, or crescent, the highest point being also furthest from you, the sides becoming rounded until almost in a line with the beholder. Except by a narrow entrance which abuts on the mansion, this feature of the gardens at Lamport is entirely hidden from view, and probably there are few rockeries nearer the residence than this one. The disadvantages of site, however, in the present case, are few—indeed, one only, that on one side it adjoins a conservatory. It was not planned thus, and the fault has arisen through a difficulty in procuring the stone that it was intended should have covered the site. The rockery has been described by Sir Charles as "an assemblage of small caves, crevices, excavations, and inequalities, carpeted and encrusted with a vegetation suited to the purpose." There has been no attempt to make it resemble a ruin by using columns or such objects; but its shadowy caves, its studied finish, its ruggedness, its extremes, are striking.

The Lamport rockery is not remarkable for an extensive variety of alpine plants. The intention has been to clothe it suitably, that the effect of the whole may be pleasing and picturesque, and that every plant when viewed individually should appear to be in just its right position. It is more correct to say that the plants have been selected to clothe the rockery, than that the latter was constructed for the growth of a collection of plants.

In the manner in which the plants have been cultivated there is much novelty. It may be said here that every stone of which the structure is composed has been placed in position by the owner himself, or by his direction, and in his presence. He has done the planting, and no other person has anything to do with it unless by his instruction. Close to our feet there is the common *Veronica spicata*. It happened to be in bloom, and it was noteworthy because growing luxuriously apparently upon the flat surface of a large stone. We should have been none the wiser had Sir Charles not explained that he had chiselled a small hole through the centre of the stone, and put soil into it, so that the roots of the plant could by that means reach the ground through the stone. This sort of thing occurs frequently, and in the case of different species, and affords an illustration of the amount of mechanical work that has been expended—some of the stones so treated being 14 inches thick. The hammer and chisel are always at hand, and they account for many of the plants succeeding in very strange situations. No plant that grows quickly is a favourite for this structure. Everything is in miniature, and if the plants are not so naturally, then their cultivation is directed to that end. It is full of plant curiosities. A stunted individual that refuses to make free growth is just the kind of plant that is sought. Dwarf Conifers form one of its features, and Sir Charles has been at some trouble to procure them. Some of them are known to be upwards of seventy years old, and have not made more than 3 feet natural growth. But besides being of this great age, many of them have also to support Ivy, which, planted at the foot, has run—well, just as much over its host as it is allowed to do, for the smallest plant is "cultivated," and limited as to size. These aged Conifers include several

Spruce Firs that came from the Royal Exotic Nursery of Knight & Perry at Chelsea, now owned by Messrs. J. Veitch & Sons; also several *Retinosporas*, silver and gold-coloured forms of *Lawson's Cypress* (Ivy-clad), and others. But the strangest looking object amongst the Conifers is a diminutive fir, probably seventy years old. It has five straggling roots, the ends of which only have penetrated between the stones, whilst a few inches of each, and the base of the plant are suspended and disclosed. Evidently when the plant had become established, the stones have been picked away from the roots so far as it was safe to do this. Thus to a large extent, the root system as well as the part that is usually above ground, may be seen.

The Utah Agave (*A. utahensis*) grows on a piece of rock a few feet from the ground, in as perfect a position as this Alpine species could be given. A few plants of the Japanese Maple (*Acer polymorphum*) in close proximity appear very suitable, and have made little growth, although planted as long ago as 1869. Here and there is the variegated Box; and occasionally over the rocks and caves, hangs a variegated Bramble. At the present time this Bramble is a very pretty sight, the foliage is beautiful, and the canes bear abundance of fruit. Yonder one sees the curled-leaved variety of the common Tansy (*Tanacetum vulgare*), and the alpine Strawberry in more than one spot clothes a projecting piece of rock with its pretty leaves. Over a good part of the rockery the Spider House-Leek (*Sempervivum arachnoideum*) creates a silvery effect, distinct and pleasing. We have not previously seen this species growing so freely and happily. A *Thalictrum*, or Meadow Rue is noticed, and a hardy species of *Euphorbia*, about 6 or 7 inches high, with dark green leaves, gives another aspect entirely to the part it covers. This species never flowers here, and contrary to the circumstance being considered a disadvantage, it is appreciated, for, said Sir Charles, "Species that do not flower on the rockery usually present a good appearance for the greater part of the year, but flowering species are apt to look 'weedy' directly they have bloomed." In the spring, however, almost the whole face of the rockery is clothed with *Aubrietia deltoidea*, and it is a sight not to be forgotten. But it is not necessary to further remark upon the species of plants, for they have been chosen from different reasons entirely to those that would count with the average gardener. Two other features of this rockery, moreover, call for mention: the first is that of the Crystal Caves situate on the right-hand side of fig. 64, and formed of quartz, &c., which are certainly uncommon, and produce a distinct and admirable effect. The second, is that of the pretty miniature figures or models a few inches high, that represent gnomes or fairy miners at work in the caves and crevices; some have caught the trade union spirit and are "on strike," as will be seen on reference to fig. 63. The demand they make (a familiar one) is prominently displayed on a board hoisted at the entrance to a crevice. The use of miniature figures was advocated by Loudon in his *Encyclopedia of Gardening* as an appropriate set-off to pigmy Fir-trees, and his idea is explained by woodcuts on pp. 28 and 29 of the edition of that work published in 1850. They certainly increase the weirdness and novelty of the scene; whilst the positions some of them have been placed in at Lamport are suggestive of reality. One of these is lying at full length upon a rock gazing over the ledge; at others, apparer

walking beneath. But the first object that fixes the attention, and even startles most visitors, is a life-size figure, in terra-cotta, of a young lady sitting upon a rock reading a book, which is held in her hands. She has evidently been engaged in tending the plants, for a watering-can stands close to her side. This figure was seen some years ago at an exhibition at Brussels, and later Sir Charles Isham purchased it from a dealer in such things in Oxford Street, London; since being stationed upon the rockery, two presents have been made her; a hat and a diamond ring. The figure is so good that it is invariably mistaken for an actual person.

We must hasten to notice features other than the rockery, however, yet not before mentioning an old plant of *Ampelopsis Veitchii* that covers the wall opposite. We said "cover," but that is not strictly correct, for Sir Charles, as he pulled away a few leaves and young shoots, remarked, "It would grow all over the wall if I would let it." That is not desired; the wall must be made visible in some places, and the thick stems of the plant are objects of admiration that require no clothing, at Lamport, at least.

Before leaving the scene we noticed a flag displayed, and in letters upon the wall may be read, "Fifty years old! This is the Jubilee of the rockery, commenced in 1847."

THE BOX BOWERS.

The pleasure-grounds may not boast a representative collection of the best kinds of trees, but in their Box Bowers and Box-trees (*Buxus sempervirens*) generally, they possess a characteristic, that so far as our experience goes is without a parallel. These Box Bowers are said to have been planted by Sir Edmond Isham about 140 years since. Some of them appear to suggest that originally the Box was planted around small groups of forest trees as an edging merely, but they have since thriven in such an extraordinary manner that, by degrees, the central trees have been removed, the Box has filled the space, and it has grown to a height of 20 or more feet. The branches have also extended laterally to a great distance, and the lower ones falling upon the ground, have become layered naturally. Sir Charles Isham has opened each of the groups in such a manner that they present deep shadows in the landscape, that are visible from the residence. One of the groups is represented by fig. 65, and on reference to this, it may be seen how Sir Charles has cut away some portion of the foliage and side-shoots in order to disclose the handsome stems of the taller trees. But in this instance the stems are not so striking as in many others. The figure represented at the entrance to the bower is that of the present Sir Charles Isham. The vigorous growth of Box throughout the pleasure-grounds is phenomenal, and the distinctive appearance it imparts to them may be imagined. Many of the stems have a diameter of more than 4 inches. The variegated variety also grows freely, and there are many instances of it found upon the walls, and as trees of considerable height.

PICTURESQUE WALLS.

In the pleasure grounds at Lamport are several high walls of rough stone, such as may occasionally be found in other very old gardens. Modern gardens rarely possess walls that are not utilised for the protection and support of fruit trees, and when in a rare old place, that, with other features indicative of a past century, there are such walls as exist

at Lamport, we are charmed by them. But the beauty of those of Sir Charles Isham's is greatly enhanced by the perfect manner in which they are clothed. They assuredly exhibit taste of an uncommon degree, and appeal to one's sense and appreciation of the beautiful. Very opposite treatment indeed has been practised in the case of the plants growing against these walls to that under which other species grow in the rockery, or even in the pleasure-grounds. Abundance of freedom characterises the growth in all instances, resulting in such complete absence of stiffness or formality as we have seldom observed elsewhere. A fine old plant of *Wistaria sinensis* with its large limbs, embraces one of the walls for a very considerable distance, and though less in its dimensions than the large plant at Hampton Court, its size is sufficient to remind one of that specimen. It is a glorious sight when covered with its pendulous racemes of delicately-coloured flowers; and even out of bloom the appearance of the plant is decidedly good. A purple-leaved Vine loosely hides the wall in another aspect, and near to this is a bold-looking plant of the dangerously poisonous *Rhus toxicodendron* from North America, and sometimes known as the Poison Ivy and Poison Oak. The plant upon this wall is probably the variety *radicans*, figured in *Bot. Mag.* t. 1806, as *R. t. vulgare*. But no plants appear to better advantage upon the walls at Lamport than the varieties of Ivy. Frequently there may be seen beautiful pieces of Tree-Ivy above the wall, similar to that which crowns the highest point in the rockery; whilst of silver variegated varieties, and a golden-coloured Ivy, there is an uncommon wealth, and the beautiful colour is phenomenal.

THE YEW TREES, &c.

A path known as the Eagle Walk runs through an avenue of *Taxus baccata fastigiata*, which have grown, and still continue to thrive with healthful vigour. The remarkable characteristic in connection with these is the method in which the trees are trained. Sir Charles prunes each of them himself, and it is not too much to say, that there are not two of them of the same appearance. The most that one generally thinks of doing in regard to training the Irish Yew is to secure the branches that are liable to be blown out of position. Columnar in habit, the tree is generally induced to become even more so than it would do naturally. At Lamport this is not the case, and many of the lower upright branches have had their tops removed at about 3 to 4 feet from the ground level. Sometimes this is done to prevent the tree becoming dense in appearance, and again to disclose the main stem, which in a pyramidal tree is usually hidden. The avenue presents a somewhat novel picture, and a certain weirdness is given to the trees from the shapes into which they have been pruned. We might mention a few other instances of trees that are pruned in an unconventional manner, but these must suffice.

THE KITCHEN GARDEN, &c.

There is a useful kitchen garden at Lamport, exceedingly old, of course, and the walls by which it is confined support a quantity of fruit-trees. Some of these are past fruiting profitably, and a few of the Peach-trees are to be removed; but there are others of greater value, and the Pear-trees especially are remarkable for the evidence they give of past and present care in training. Vegetables are plentiful during the present season. Mr. H. Kempshall,

the gardener, showed us capital crops of Onion Potatoes, Peas, and other kinds. Celery making good progress, and first-class Lettuce and such like, in all possible places, indicate that the garden was cropped to the utmost. There were excellent Tomatoes under glass, Grapes, Melons, and other fruits looked well. We remarked an exceedingly heavy crop of indoor Peach-trees, and it will need much skill to induce them to repeat it year after year.

The few plant-houses were neatly maintained, and in the borders out-of-doors, a display of flowering-plants was particularly commendable.

Lamport Hall contains many very valuable paintings, and besides these there are numbers of interesting and curious features. These Sir Charles was kind enough to show and explain to us, but they are not exactly matters that need be discussed in the *Gardeners' Chronicle*, though two of them may be briefly mentioned. In the drawing-room is a number of dried specimens of *Gypsophylla paniculata*, which look like a bush placed in an 8-foot trumpet-glass. Upon them are fastened a quantity of the most gorgeous butterflies. The idea is to make them appear as naturally alighted thereon. In the dining-room was a permanent table decoration, consisting of some dried Blackthorn shoots covered with beautiful lichens, and tastefully mounted also *Gypsophylla paniculata* and *Cotoneaster*. The Blackthorn was collected from a very distant district by Sir Charles.

Many years ago there used to visit the grounds at Lamport thousands of visitors from Northampton and elsewhere. *Fêtes* were then in support of charitable institutions, and Sir Charles Isham was most enthusiastic in making them a success. Indeed, his gentle nature was such, that notices were placed about the gardens inviting visitors to place themselves to flowers to place in their button-holes. Sir Charles and Lady Isham are deservedly held in the very deepest affection by their tenantry, servants, and all who have experienced their goodness and courtesy. P.

NEW OR NOTEWORTHY PLANTS.

SELAGINELLA HUMILE, Jenman, n. sp.

Stems prostrate, or sub-erect, very short, slender, leafy to the base; fronds once or twice branched both sides, $\frac{1}{2}$ an inch to $1\frac{1}{2}$ inches long, $\frac{1}{4}$ to $\frac{1}{2}$ inch wide; pale straw-green, main rachis and branches angular, 1 to 2 lines wide over the leaves; leaves spreading, lax, not imbricating; linear-sub-acute, the base oblique, $\frac{3}{4}$ to 1 line long, ciliate-edged; minor leaves minute, ovate, conspicuously aristate, slightly keeled or not, densely imbricated; spikes very short; quadrate or flattened, dense, keeled, cuspidate.—Trinidad, Indies. It comes in between *S. caribensis* and *S. albonitens*, and is a very small, soft, delicate species.

SELAGINELLA MAZARUNIENSE, Jenm., n. sp.

Stems stout, stiffly erect, one to two spans sub-angular or cylindrical, ligaceous, brown or ashen, laxly clothed with appressed sub-ovate like leaves equally from base to top, the stem being freely between; fronds ample, quite erect, late, 12 to 18 inches wide and deep, consisting of spreading dichotomously-branched, flat divisions, lower largest and more compound; the branches spreading, and $\frac{1}{4}$ to $\frac{3}{8}$ inch wide, tapering outwards, the fertile ones truncate at the top 10 inches long, the margins serratifid; major branches spreading, falcate, imbricating acutely, slightly ciliate at the oblique base, a line wide, 3 lines long.

iliate; minor leaves minute, appressed, ovate-cuspidate, in a double series, very dense; spikes 4-gonal, tail-like, 2 to 3½ inches long, pendent; bracts densely imbricating, sharply keeled, mucronate — upper regions of the Mazaruni River, forming dense thickets. The finest species in the colony, the barren fronds resembling most those of *S. Parkeri*, but differing in particulars. Its principal difference from any other local species is in the long, slender, tail-like spikes, resembling those of several *Lycopodiaceae*, such as *L. guadalupianum*, although not branched. *G. S. Jenman*, *Demerara*.

SAFFRON CULTIVATION IN KASHMIR.

In an interesting volume on the *Valley of the Kashmir*, by Walter R. Lawrence, are some notes on the cultivation of Saffron, from which the following

tried in vain to cure him. Baffled, the physician at last asked the water-god whether he was a man, and on finding out that he was a Nág, he at once saw that the remedies applied to the Nág's eyes were nullified by the poisonous vapours which issued from the water-god's mouth. He bound his eyes with a cloth, and the Nág was restored to health. In his gratitude, the Nág gave the physician a bulb of Saffron, and the cultivation sprang up at Padampur, now known as Pámpur. The system of cultivation, it is said, suggests the idea that it is unnecessarily slow and primitive, and the European methods of producing seed-bulbs might increase the production of Saffron in Kashmir. At present cultivation is extending as fast as the local method of seed production will allow, but that this method is slow may be inferred from the fact that at measurement of a total area of 4527 acres of Saffron-land, only 132 acres were actually cultivated with the *Crocus*. In

for planting out the bulbs is in July and August and all that the cultivator has to do is to break up the surface a few times, and to ensure the proper drainage of the plot by digging a trench on all four sides. The flowers appear about the middle of October, and the purple blooms, and the delicious, though somewhat overpowering scent of the Saffron turn the dry, uninviting plateau above Pámpur into a rare and wonderful garden. There is no doubt that the soil above Pámpur is strong, for excellent crops of Wheat and Barley are grown there. Although the cultivation of Saffron has extended most satisfactorily during the last two years, it is feared that the system of collection adopted by the farmers will have the effect of preventing the industry becoming popular, as during harvest-time the cultivators are as carefully watched and supervised as diamond-diggers at Kimberley. In former days men came from all parts of Kashmir to cultivate Saffron; but now, with



FIG. 62.—SECTION OF ROCKERY AT LAMPORT HALL. (SEE P. 209.)

acts are taken. The drug in Kashmir is famous for its bouquet, and is in great request as a condiment, as well as for a pigment for the forehead-marks of the Hindus; various substances, such as turmeric, are now used for the latter purpose by the Kashmiri pundits, but if a man can afford it, he will use the right saffron colour, mixed with red-lead, and rounded with a piece of Deodar-wood.

The cultivation of the Saffron is peculiar, and the legend about its introduction into Kashmir shows, at any rate, that it is an ancient industry. In the time of King Lalta Dit there was a famous physician at Padampur, the city founded by Lalta Dit's minister, Wazir Padam. A Nág, or water-god, fell sick of an eye complaint, and went to the physician, who

former days the Saffron cultivation was a large source of revenue to the State, but during the famine the people in their distress ate up the bulbs, and although seeds have been imported from Kishtweir, and every year land is set apart for the production of seed, the process of reproduction is slow. For seed purposes a particular aspect and sloping ground are required, and it takes three years before the bulbs can be planted out in the small square plots, where the Saffron is to be grown. These plots must remain fallow for eight years, and no manure or water given to them. When once the bulb has been placed in the square, it will live on for fourteen years without any help from the cultivator, new bulbs being produced, and the old one rotting away. The time

the exception of a few men from Trinagar, the cultivation is in the hands of local men. At harvest-time the whole flower is picked, and put into bags, and then taken to the farmer, who takes one bag for himself, and gives the other bag to the cultivator. The bags are never opened, and it has been found by experience that the cultivator never attempts to foist a bad bag on the farmer. The cultivator then takes his bag to the left bank of the river, and makes his own arrangement for sale. When the flowers are collected, the real work of extracting Saffron commences; the flowers are dried in the sun, and the trifid stigmas are picked out by hand. The reddish-orange tip forms the first-quality Saffron. The long white base also makes Saffron,

but it is of inferior quality to the tips. The Saffron thus collected in a dry condition is known to the trade as "Mougla," and fetches one rupee per tola. When the "Mougla" Saffron has been extracted, the sun-dried flowers are beaten lightly with sticks and winnowed. Then the whole mass is thrown into water, when the petals swim and the essential parts of the flower sink, the latter are collected; and the parts which have risen to the top are dried and again beaten with sticks, and then plunged into water. The process is repeated three times, and each time the parts which sink become poorer. One form of adulteration is to mix the sunken parts of the third stage with those of the first stage. The Saffron obtained in this way is lighter in colour, and of fainter scent than the "Mougla," and is known to the trade as "lacha," and sells at twelve annas per tola. The Saffron when made is sent to Amritsar and other trade centres by registered post.

PLANT NOTES.

BEGONIAS.

TUBEROUS-ROOTED Begonias, La Fayette and Worthiana, are admirably adapted for bedding-out, the former being very free-flowering, of erect habit, in colour a crimson-scarlet, and with double blossoms, its height being about 9 inches. Worthiana is single-flowered, of an orange-scarlet colour, also very free, and of dwarf habit. Beds filled with each variety, and edged with bands of Golden Feather, are now objects of special beauty in the gardens of East Burnham Park. C. H.

HIBISCUS SPLENDENS.

In Australia this species grows to the size of a small tree. Under cultivation it forms an acceptable plant for the greenhouse, and flowers continuously for several months during the summer. The stems and foliage are covered with rough hairs and small light brown spines. The axillary flowers are about 2 inches across, and the broad petals are a most pleasing tint of pinky-white. At the base of the petals runs a dark purple circle, the stamens also being of this colour, forming a good colour-contrast to the other parts of the bloom. The cultivation of the plant, when given a good rich soil, is easy.

PHYSTELMA (HOYA) CAMPANULATA.

The flowers of this species are very unlike those of other Hoyas, under which generic name it is sometimes grown. It is a climber with wiry stems, and opposite leaves in which the venation is not as marked as in Hoya, and the internodes are very long. The bell-shaped flowers are in cymes, and form quite a little bunch of buff-coloured corollas hanging from the stems. In Java the plants are said to flower the whole year. It is well worthy of a place in the stove, and needs little attention if potted in a rough, peaty compost, and afforded good drainage.

SEDUM CÆRULEUM.

This is an old plant that deserves to be more commonly cultivated, both out-of-doors and in the greenhouse. If sown in the spring the growths soon flower, and form quite a carpet of pretty, light blue, star-like flowers, which continue for some weeks. The plant does not grow more than 3 inches in height, and in a dryish border it makes a charming edging. A figure may be seen in the *Botanical Magazine*, t. 2224. *Grammanthes chloriflora*, of similar habit, producing orange and red-coloured flowers, is also a good plant.

BEGONIA PRESIDENT CARNOT.

This Begonia has been in commerce for some years, but it is far too seldom seen. For two months past a specimen has been in flower here, in a cool stove, where it is planted under the staging at the back of the hot-water pipes. The stems (about 13 feet long) are trained over the roof, and have made their way into the lantern. Just now there are about forty trusses of its large rosy-carmine female flowers; and as these hang in clusters, some of which are 9 inches

across, the effect can be imagined. For this handsome plant we are indebted to M. Crozy, and it is said to be a cross between *B. Olbia* and *B. rubra*, the latter species being probably intended for *B. coccinea*. R. L. Harrow, Royal Botanic Garden, Edinburgh.

KEW NOTES.

CRINUM BALFOURI.—This species was discovered in Socotra by Dr. J. B. Balfour when he explored that island in 1880. It flowered at Kew in the autumn of the same year, and was figured in the *Botanical Magazine*, t. 6570 (1881). A bulb of it was brought from the same island by the late Mr. Theodore Bent, who found it and other Crinums, as well as *Begonia socotrana* and other plants, when collecting there a few weeks before his death, which occurred in May last. This bulb is now in flower in the stove at Kew, and the parts of the plant are larger generally than those given in the *Botanical Magazine*. The bulb is 4 inches in diameter, the neck 4 inches long; the leaves glaucous-green, 1 foot long and 2½ inches wide. The scape is 2 feet long, compressed, and it bears an umbel of fifteen flowers, which are pure white, fragrant, with narrow spreading segments 3 inches long, the stamens and stigma tinged with pink. It comes nearest the new *C. Woodrowi*, recently introduced to Kew from Bombay.

THE KEW BELLADONNA LILY.

There are four large flower-heads of this magnificent variety in full blow in front of the Orchid-houses at Kew, and by the side of them is a border crowded with flower-heads of the common form. The difference between the two is most marked, the scapes of the Kew variety being twice as long and correspondingly stout, the number of flowers in the umbels four times as great, whilst the flowers are of a rich rose-crimson colour. How this variety originated is uncertain. It was said to have been obtained by crossing *Amaryllis Belladonna* and *Brunsvigia Josephina*, but there are no traces of the *Brunsvigia* in the Kew plant. There are young plants at Kew which are certainly the result of crossing the *Brunsvigia* with the *Belladonna*, but they are only about two years old. Meanwhile let me recommend the Kew *Belladonna Lily* to large growers of bulbs in such places as Bermuda, Natal, &c. A few thousands of it would find a ready sale in England. It is by far the handsomest autumn-flowering bulbous plant I know of.

THE BERMUDA LILY.

This is now flowering freely both in the temperate-house and in the open air at Kew. The usual time of flowering for this Lily is from April to June, according to the treatment it receives, but it appears that the season may be lengthened by securing bulbs that have been grown in Natal, the bulbs now flowering at Kew having been purchased at the auction-rooms in April last. They were advertised as having been grown in Natal, and about 4000 were sent over to England for sale as an experiment. Judged by the plants at Kew the experiment is a complete success. The bulbs when sold were equal to the best samples received from Bermuda, but they realised less than is usually paid for good bulbs in September. The enterprising person in Natal who sent these bulbs should send more next April, and those who want good white Lilies in September should buy them.

GLADIOLUS PRIMULINUS.

and a pink-flowered *G. oppositiflorus*, are two interesting species now flowering in the collection at Kew. The former was described in 1890 from bulbs flowered at Kew in 1890, whither they had been sent from the Usagava Mountains, in East Tropical Africa, by Mr. Missionary Last. It has the habit of, and is quite as sturdy as *G. dracocephalus*, whilst the flowers are of an uniform primrose-yellow colour. It is well worth the attention of breeders of *Gladiolus*. It flowers and seeds freely at Kew every year. The second species was lately received from Mr. Howlett, of Uitenhage, who obtained it from Matabeleland. The type, noticed in the *Gardeners' Chronicle* in March, 1893, p. 291, has white flowers, on spikes

4 feet or more high; but this pink variety has about a yard high, which are crowded with coloured of a rich pink, with dark crimson petals. It did not flower until the present month, and is little chance of its ripening seeds this year. *Oppositiflorus* is one of the parents of the garden section of *Gladiolus*, it is remarkable that it flower very late in the year.

URGINEA SCILLA.

A large bulb of this, the plant from which is obtained, is now bearing a tall spike of flowers in the Cape House, at Kew. If it were to flower frequently under cultivation in this country it would deserve to rank among useful bulbs for the house, the inflorescence being not unlike that of the smaller species of *Remurus*. The bulb is 6 inches in diameter, and leafless; whilst rising from its centre is an erect spike 1 yard high, the half clothed with star-shaped white flowers, measuring an inch across. The leaves, which are developed in the winter, number about twelve, and are strap-shaped, about 1 foot long and 2 or 3 inches wide. The plant is found abundantly in the bordering the Mediterranean, the Canary Islands, from whence the bulbs are imported to be sold dried for use as a medicine.

A YELLOW IXORA.

According to botanists, this is one of the varieties of *I. coccinea*, but for garden purposes requires a distinctive name. It is *I. coccinea lutea* of the Ceylon Botanic Garden, whence plants have been obtained for Kew, and have flowered freely in a stove this year. The form compact shrubs about 1 foot high, with green-ovate leaves, 4 inches long by 2 inches wide and terminal, rather loose cymes of buttercup flowers, each with a tube 1 inch long, and 1 inch across. The plants continue to push out from the base, which flower when about 1 foot high. *I. coccinea* is widely distributed throughout both wild and as a garden plant; but this flowered variety is only known to occur in India. It may conveniently be called *I. lutea*. W. H.

THE ROSARY.

THE ROSE GARDEN IN SEPTEMBER.

A VERY great mistake is, I think, sometimes made by amateur Rose-growers, who think that when the summer bloom is over the plants may be left to themselves. It is the way with a good many when people have got all out of them that they neglect them, and leave them to their fate. Thus, if you go to the rosary now, you will find strong shoots with half-a-dozen blooms each, which, in the earlier months of the year, have been closely disbudded—and yet surely coloured Duke of Edinburgh or a Mrs. John are more valuable now than they were when the garden was full of Roses. Therefore I think it is one point that has to be looked to in September, and if the Rose-growers have returned from holidays, when probably their plants have had time of it, this should have attention.

There is another point which I have of late urged upon Rose-growers, viz., the desirability of leaving all the pruning to be done in the spring, have at one time or another to get rid of the ing wood of the current year, and of such shoots as would be unlikely to give us good. When should this be done? The general opinion would, no doubt, be—oh, of course, in the autumn, but from this opinion I differ. I think it is better to get rid of it now, as by so doing more light into the plant, and consequently the ripens and hardens better. There have been many differences of opinion as to the value of ripening; but I should think the general conclusion of opinion would be that it is a most important factor in obtaining good results in the next year, and therefore I would say, cut out all that is not wanted for next year. Of course

only of dwarfs, on whatever stock they may be grafted. Although for a long time during the dry of July the growth of Roses seemed almost standstill, yet when the rains came it was not to see how rapidly the plants sent out from the underground stems; these are the ones on which we depend for our next season's crop.

And here let me give a word of warning: that you have plants budded on the Manetti you watch the stocks very carefully, and see that you are not encouraging their growths instead of those of the roses. The foliage is misleading, and, unlike the leaves of the Manetti, is not easily distinguished from that of many roses which are budded on it; and it is no uncommon thing to see even in good gardens a flourishing of the stock, while the scion has completely died. It is desirable also in exposed situations to see that the long and juicy shoots should be cut against the wind—and what winds we had this year! The best way to do is to place a stake to each of them; of course,

that I have plants in my garden which have been budded for upwards of forty years on the Manetti, and yet are strong and healthy—and I do not think more than this can be expected of own-root roses. Should, however, anyone wish to make cuttings, the present is the best time for doing it; shoots of about 9 or 10 inches long are the best suited for this purpose—a place should be prepared for them in a shady border, the soil should be light, having a good proportion of sand in it. It is indifferent whether the cuttings have a heel or not, but care should be taken that nearly the whole of the cuttings should be buried, leaving only one or two joints above the ground. The eyes of these joints which are buried, had better perhaps be taken out with a sharp knife; and it may be desirable to put a frame over the bed in severe weather. The Americans are somewhat fond of Rose-propagation by cuttings, but with them bottom-heat is used to a great extent, and the plants are grown more for the purpose of producing flowers than for making good plants. They

I do not refer to standards or half-standards, which many amateurs bud for the purpose of obtaining maiden blooms.

When new beds have to be formed (and, of course, all who really love the Rose will be anxious to give it a place to itself), now is the best time to be preparing them. We constantly hear complaints of amateurs having a bad soil for Roses, but this is a matter which can in most cases be remedied. The soil which the Rose prefers is that of a good greasy-loam; but all of us do not live in Hertfordshire or Essex. Good drainage is, however, one great essential, and when the soil is too retentive, artificial drainage should be resorted to; but I am more than ever persuaded that a good climate is a better factor in successful Rose growing than a good soil. It is in most cases possible, to make a bad soil into a good one by procuring some cart-loads of good loam; and this should now be obtained where necessary, and well dug in, and the bed left in a rough state until the time for planting comes on. The question as to whether manure should be used at the same time is a much debated one, but I think, on the whole, it is safer not to make use of any. The amateur having made all these necessary preparations, may now con the Rose catalogues, and look through his Rose-beds, in the one case to decide on what new varieties he shall introduce, and in the other what plants he will discard. It is early enough to carry both of these into execution, but it is well to be forearmed, for when the month of October comes there are so many things in the garden to be thought of, that it is well to clear these matters away before that month sets in. *Wild Rose.*

FOREIGN CORRESPONDENCE.

LILY-BULBS AND OTHER CHINESE FOODS.

THE several thousands of Chinese resident in San Francisco are remarkable for their aversion to "white devils' bread," and for using in its stead a number of articles, either imported at considerable expense direct from China, or grown by them in the rich alluvial valleys of California. One may frequently see offered for sale in the provision-dealers' stores in China-town, San Francisco, large baskets of yellowish-white Lily-bulbs, with large scales. Enquiry elicits the information that these bulbs are eaten as a vegetable by the Chinese, after being lightly boiled. I have made several attempts to grow them in the Botanic Garden of the University of California, but without success until the present season, probably owing to lack of moisture. Last March, however, I obtained two fine bulbs in China-town, and planted them in the light soil of a shaded rockery, subject to daily watering, and on August 21 one opened a fine blossom, which proves to be that of *Lilium japonicum*, var. *Browni*.

Among other things frequently met with in the provision stores of China-town are:—tubers of arrow-head, *Sagittaria latifolia*, Willdenow; the long white roots of Chinese Radish, *Raphanus chinensis*; young plants of an *Amaranthus* neatly tied up in bundles; the young shoots and flowering tops of the Chinese Cabbage, *Brassica chinensis*; sprouted seeds of the Soy Bean, *Glycine Soja*; black, white and green seeds of *Glycine Soja*, and a small, square, white cheese made from the same, wrapped in a yellow cloth, and bearing a brown Chinese monogram; "stones" of Ginkgo fruits (*Ginkgo biloba*); tubers of an Aroid (*Colocasia*?); rhizomes of Chinese Ginger (*Zingiber* or *Alpinia*?); Yams, tubers of species of *Dioscorea*; sea-birds' eggs from China, each wrapped in a plaster of wet dung or clay; dried octopus; ducks skinned, spread out, and dried; dried clams; dried cuttle-fish; pork, fresh, roast or dried; seeds of *Nelumbium speciosum*; water-melon seeds; and numerous articles the botanical or zoological origin of which I have not yet discovered.

The drug-stores of China-town are equally remarkable. In them one can usually obtain a panacea for all ills, varying in the number of ingredients according to the price paid (25, 35, or 50 cents). This prescription usually contains a few slices of the root of a *Glycyrr-*



FIG. 63.—SECTION OF ROCKERY AT LAMPART, SHOWING THE FAIRY MINERS "ON STRIKE."
(The figures are about 3 inches high. See p. 209.)

has great play on them, and unless in some such way as this, they will get considerably damaged, and oftentimes the whole plant is about, leaving a hole which in a wet soil is apt to get filled with water, and so injure it. For the same reason, where the shoots are long, they often do it, it is to slightly shorten them.

This is a subject which at this season of the year to attract some amateurs, I mean that of Roses on their own roots. We are being told how much more natural, and, how much better such a process is. We are told that it is a more rapid method of growing and that they live longer. To both of these I demur; many Roses raised from cuttings slow in getting hold of the ground, and it is of years before any good return is given. I have, and then, it is true, seen some good results, none whit better than if the plants had been

I have never found that what we call Roses do any better on their own roots. I have seen such varieties as Horace Vernet, Louisette, or Reynolds Hole doing well in this way, and as to their longevity, I can only say

are not turned out-of-doors, and after they have served the purpose of flowering, they are in most cases cast aside. Considering the cheap rate at which Rose-plants can now be had, I do not think that any amateur would trouble him or herself with this method of propagation. I feel that in writing this, that I am like the cook who gave directions for dressing a pike, who, after giving elaborate instructions as to how it was to be stuffed, and the care with which it was to be cooked, added, having done all this, "pitch it away." So I would say to those amateurs, do not trouble yourself about Roses on their own roots—in fact, many of our largest amateur growers do not propagate their own Roses; they prefer going to some nurseryman in whom they have confidence, and obtaining their plants from him. There may be advantages in budding your own plants; you may be more sure of selecting good flowering-wood, and so not be disappointed when the time for blooming comes on. But, knowing how very careful Rose-growers are in all that pertains to budding, and how anxious they are to maintain their reputation, I think the matter may be safely left in their hands, and I am sure that a great deal of trouble and worry will be avoided by carrying out this plan.

rhiza; the bark of a tree—"him make heap strong," said my suave, almond-eyed druggist—dried flower-heads of a composite plant, dried cockroaches, dried cockchafer—"him good make see far," said John, pointing to the large eyes of the creature; and the skin, head, and tail of a lizard, stretched on thin sticks. An extra five cents will procure a dried "sea-horse;" and yet another five cents, a dried fish of peculiarly narrow shape, and about 4 inches in length. The black-capped, pig-tailed assistant makes a paper package of the whole, and deftly ties it round with a grass-like leaf, of Chinese origin. Before leaving I asked how the medicine was to be taken, and was told to boil all the ingredients together, make a tea of them, and to drink the same whenever troubled with heart-burn, toothache, cough, dimness of sight, or other ailment. *Joseph Buritt Davy, University of California, Berkeley, U.S.A.*

ORCHID NOTES AND GLEANINGS.

LÆLIO-CATTLEYA × *CLIVE* (C. *DOWIANA* ♀, *LÆLIA* *FUMILA* *PRESTANS* ♂).

A VERY fine bloom of this handsome hybrid, raised by N. C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, is sent us by his gardener, Mr. Murray. The sepals and petals of the flowers are of a bright rosy-purple; the peculiarly-formed lip, which is nearly 3 inches broad, is of a bright tint of purple with lilac apex and orange-and-brown markings in the base and middle area, and velvety in texture. The flower has the fragrance of the Rose. It resembles *L.-C. Ingrami* (*L. Dayana* × *C. Dowiana aurea*), but may readily be distinguished from that variety. *J. O'B.*

HOULLETTIA BROCKLEHURSTIANA.

This species is probably the finest of this small genus, and is a source of attraction whenever it is in flower. In a healthy condition it is a strong grower, forming large pseudo-bulbs of a roundish shape, which bear single leaves, the blades of which are about 18 inches long, borne on a rounded petiole 1 foot in length. The basal inflorescence is nearly erect, and stands well above the compost. A plant in the Cattleya-house of the Edinburgh Botanic Gardens bears two spikes, one of which carries eleven, and the other six fragrant flowers. In colour these are of a reddish-brown, spotted with purple, and the sepals are tipped with brown. Another species, *H. odoratissima*, a Columbian plant, is also coming into flower. Both are grown in the Cattleya-house, and are afforded a good supply of water when growing.

MASDEVALLIA CORNICULATA

is very distinct in the colour of its flowers, which are brownish-red, curiously mottled and spotted with yellow, the tails also being yellow. They are borne on pedicels scarcely as tall as the foliage. The tube is very broad; indeed, this is the feature of the flower. A variety named *M. c. inflata*, said to be of a more yellow colour, with less spotting, was introduced in 1881 by Messrs. Bull; and the type made its appearance four years earlier at Messrs. Backhouse & Sons, having been obtained for them by their collector at an altitude of about 9000 feet in Colombia. *R. L. H.*

FLORISTS' FLOWERS.

THE AURICULA.

THE season appears to have suited the Auricula remarkably well. That there has been loss of plants goes without saying. The rarest and most carefully-tended collections are not exempt from loss; the insidious rot, canker, the devouring grub, &c., destroy some, and too often the more valuable varieties. Green-fly has given but little trouble, and it can always be kept under without difficulty.

There are two periods of growth for the Auricula—one which commences in January or February, indicating that the time of blooming is approaching; the other is in July and August, when it develops

vigorous leaves. Growers, as a rule, like to re-pot their plants previous to the second period of growth, so that the plants may have the advantage of fresh, sweet soil.

Change of quarters is highly desirable during the summer months. There is nothing like an open north exposure, especially if the position be a cool and shady one, yet exposed to the sunshine for several hours daily.

Free and ample drainage and porous soil are advisable at the summer potting; 1 inch deep of drainage is desirable, and some growers give 2 inches. I find that the most healthy plants are those in soil which dries quickly; and the plants will bear a little drought without receiving harm. It is when the soil becomes dry, and remains so until the young root-fibres perish, that harm is done.

At the time of potting, it is usual to take off any rooted offsets, and re-pot them singly in small pots if the offsets are large enough, or if small, place a few round the sides of large pots. Dryness at the roots must be guarded against when the young stock is making roots; enough moisture to keep them active is sufficient. The frequent addition of young stock of leading varieties is most important, as it is only in this way that a collection of Auriculas can be maintained in vigour. Sometimes a plant appears to become weak for some reason, and fails to make growth. When this happens, it is a good plan to make an exchange with some grower at a distance, and especially with one living in a northern county. The reason why some old varieties of fine quality remain so long in cultivation is, that they are well cared for. A plant of an Auricula will last for many years, and it has been well said that "the span of human life may not suffice to measure the lifetime of an Auricula." I have inherited some old varieties which have been grown for a good part of a century, and may be cultivated for yet as many more years; and varieties are now being raised which may find as great favour with our descendants. But some do wear out in course of time, showing signs of the approach of old age by becoming less constant in character. Every one who succeeds in raising a fine new Auricula which displays permanence of character, is a benefactor to those who care for and cultivate this fascinating flower. *R. D.*

THE HERBACEOUS BORDER.

EUCOMIS PUNCTATA.

THIS useful Cape bulb forms a desirable subject for general decorative purposes at this season, when simply grown on in 5 or 6 inch-pots. For room decoration it is admirably adapted, lasting at least a fortnight in good condition in an ordinary living-room. A moderately strong bulb in a 5-inch pot produces a spike 18 inches to 2 feet high of its starry, wax-like flowers, which are whitish, and spotted with rose, and possesses an agreeable fragrance. My principal object, however, in penning this note was to recommend it for a position in the herbaceous border or the flower-garden, where, if planted at 5 or 6 inches in depth in a moderately light and well-drained soil, it forms at this season an object of beauty. It is most effective when planted in a group on a sloping bank. A few days since I saw a very fine group in full bloom in a position such as this in the gardens of East Burnham Park, Slough, and the effect was both striking and unique. The flower-spikes last fresh for a considerable time after being cut. *C. H.*

ASTER AMELLUS.

The autumn-flowering perennial Asters are later in flowering this year than I have ever before known them to be, and late-flowering varieties, such as *A. turbinellus* and *A. ericoides*, unless October is warm and genial, will not reach flowering at all. *Aster Amellus* did not begin to flower till September—a full month later than usual. The very backward spring made these plants late in starting, and during the hot and dry July they made no progress, and some were burnt to death. Being in Savoy last autumn, near

Aix, where *A. Amellus* abounds wild by roadside everywhere, I was surprised to find how little it varies there, and how entirely it differs from *A. Amellus* of English gardens. The wild plant is altogether smaller, and the flowers, both the disc and the rays, less than half the size. It is possible it has been improved by cultivation and selection of seedlings; but I rather think that it is a superior variety which we have, perhaps var. *Bessarab*, which I have never seen as a wild plant. I have a white variety which was collected in Savoy, but it is dull, and the rays few, and it is a plant of little merit. It comes partly true from seed, but two or three generations has shown no tendency to improve. *C. Wolley Dod, Edge Hall, Malpas.*

THE WEEK'S WORK

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

The Herbaceous Borders will require attention the removal or partial cutting-back of withered stems and blooms of such plants as *Paeonies*, *Delphiniums*, *Aconitum*, *Sunflowers*, and others. Since the weeds have sprung up freely; therefore, when the surface is in a sufficiently dry state, use the Dutch hoe frequently.

General Work.—If fine weather continue, it, accompanied by frosty nights, the bedding-plants generally will make a fair display up to the end of the month; and to preserve a tidy appearance as long as possible, continue to remove all decaying leaves and flowers. Subtropical plants, such as *Cannas*, *Ricinus*, *Hedychiums*, *Abutilons*, *Fuchsias*, and some of the foliage plants, are now looking better than ever, while the yellow-flowering *Cassia corymbosa* is blooming profusely. The propagation of all the plants should be completed without delay. A number of plants should be struck in pots or small boxes sufficient numbers for providing cuttings in the spring. Clean growths should be selected for cuttings; the youngest shoots that are quite free from flower at the points being the best. If *Lobelias* of the *L. speciosa* type are propagated by cuttings, cut over a few of the plants from the least conspicuous position of the garden; and pot-up these a little later, and they will furnish plenty of spring cuttings. *Dahlias* should be examined, and either the colour of the flower or name placed to each where these are missing, or names on existing labels have become illegible.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorset.

Schomburgkia tibicinis.—*S. Sanderiana* and *Kimballiana* are quite distinct from other Orchids having hollow cow-horn-like pseudo-bulbs. The plants are now growing freely, and should be placed in such a position in the warmest house as will expose them to full sunshine. They should be well supplied with root-moisture until growth is completed, the flower-spikes are seen emerging from the crevices of the new pseudo-bulb. Gradually lessen the supply of water at this stage until the flowers fade, and then place the plants in a cooler and drier atmosphere. Other species such as *S. undulata* and *S. Lyonsii*, may be given the same cultural conditions. *S. crispata* and the closely allied *Lælia superbiens*, will thrive if placed among the *Cattleyas*, and treated similarly to those species.

Catasetums and *Cynoches* at this period should be placed on the south side of the hottest house, and pended well up to the roof-glass. Until the growths are completed and the leaves commence to show colour, an abundance of water should be given to them. Any of these species now showing their flower-spikes will require generous treatment until the spike is cut, when the plants may be suspended in full light in a cooler and drier house. Until the leaves have fallen, they must be kept moist at the roots, afterwards, if thoroughly well ripened, they require but little or no water throughout the resting period. The varieties of *Mormodes* grow in the temperature of the *Cattleya*-house and be treated similarly.

The Mexican Division.—*Lælia anceps*, *L. autumnalis*, *L. albidula*, *L. Gouldiana*, *L. furfuracea*, *L. pedicularis*, *L. majalis*, *Cattleya maxima*, *C. speciosa*, *Luisia Amesiana*, *L. Kimballiana*, *L. Psyche*, *Vittaria*, *V. Amesiana*, *V. Kimballiana*, *Epidendrum*, *Randi*, *E. atro-purpureum* (*macrochilum*), *E. cili-*

cine, *Oncidium splendidum*, *Odontoglossum Lodenboroughianum*, *O. citrosum*, *Cyrtopodiums*, *Barkerias*, &c., will henceforth require only the thinnest of shading at any part of the day.

Cattleyas.—The majority of the *Cattleyas* will stand more direct sunlight at this season than at any other. By gradually exposing them to more light and air, the newly-made pseudo-bulbs and leaves become hard and well-ripened, conditions which greatly assist them to pass through the winter safely. Where such plants as *Vanda tricolor*, *V. suavis*, *Trichopileas*, *Miltonias*, *Coelogyne elata*, *C. grammifolia*, *C. Cummingi*, *C. corrugata*, *C. fuliginosa*, *Cymbidiums*, and the cooler-growing *Cypripediums*, are placed in the same house as the *Cattleyas*, they should be put at one end, and be carefully shaded from strong sunshine.

Eslophiella Elisabethae has made a considerable number of new growths, and the plant is beginning to root freely from the rhizomes. The present is a good time to re-pot the plant, and being a vigorous-rooting species, it should be placed in a rather large pot, and with a one-fourth less depth of compost than is afforded to *Orchids* generally. It will root freely in well-drained peat and sphagnum-moss. Place the plant on the shady side of the hottest house, and afford it copious waterings throughout the growing season. Preserve a constantly-moist atmosphere around the plant, or thrips and red-spider will injure the foliage. The new *E. Peetersiana* may also be re-potted now, and treated similarly.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leobury.

Peaches and Nectarines.—Trees that have made strong growth, and especially young trees, may require to be root-pruned, and as the leaves will soon fall from the trees in the earliest house, the work may be proceeded with at once. Take out a trench around the tree sufficiently far from the stem to catch the points of the roots, then fork backwards towards the tree till a sufficient quantity of the roots are exposed; which shorten back according to the strength of the tree, and if very strong, right back to the ball; then fill in firmly with the old soil. Should any of the roots look other than clean and healthy, the old soil should be replaced with some fresh, moderately heavy loam, and a liberal addition of sound lime rubble, carefully relaying the roots as the process of filling up goes on. We examine the roots of all our trees every year in this way, taking care to keep a sufficient distance from the trees, and we thus are sure where the roots are and what their state is, and can therefore afford nourishment without waste. If advantage be taken of wet days for effecting the root-pruning of inside trees, the labour is missed but little. If any trees are to be removed and others brought in, the decision must be determined very soon, and preparations made for carrying out the work. If the work be done before the leaves fall, good-sized trees can be moved with very little check. We moved large trees from inside to out-of-doors and vice versa last autumn, and have taken good crops of fruit from the trees this season. When moving the trees, keep as much soil as possible on the balls, and take care that the place is made ready before a tree is removed. Cover the roots up quickly and carefully, and they will commence action in a few days, and obtain hold of the new soil before all the leaves fall. In later houses, as soon as the fruit is gathered, lose no time in thinning-out superfluous shoots, so that the wood may thoroughly ripen. See that no trees are suffering from lack of water. I afford water to the trees as regularly, though not so frequently, through the winter as in the summer, and consequently suffer little from bud-dropping. Collect and tie in bundles all laths that have been used for propping up the fruit. Look over late trees on alternate days, and gather all the fruits that readily part from the trees. Houses containing fruits should be closed on cold nights, but all others should be fully ventilated.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Cauliflowers.—Plants still in the seed-beds if intended to be kept through the winter, should not suffer from crowding together, or they will not prove satisfactory. It is better to thin them out, pricking off the plants removed into other beds, or

where they can be covered with a frame or hand-glasses during the winter. Although protection is necessary in all but the most favoured districts, it should not be given until it is necessary, and air should always be afforded when there is no frost or rain. If cold frames are used, these should be sunk in the soil, so as to bring the plants up to the light. The time-honoured method of wintering Cauliflowers in hand-lights has not been excelled, although the ability to raise Cauliflowers in heat, by sowing the new early varieties has caused their disuse in many gardens. For the benefit of gardeners who may not have used hand-glasses or cloches, a few words of explanation may be necessary. The land—on a south border by preference, having been trenched after a heavy manuring, should be allowed to settle for a fortnight, and then be levelled, and made firm by tramping it evenly all over. It should then, on a dry day, be raked roughly, and lined out into beds 3 feet wide, with alleys between them of 2 feet in width. The hand-glasses (cloches), or hand-lights, measuring 2 feet square in the case of the latter, and 20 inches in diameter in that of the former, should then be arranged at a distance of 2 feet apart on the beds. The Cauliflower plants may then be planted in the space enclosed by each cloche or hand-light, at about 7 inches apart. In early April all but the four corner plants should be removed from each hand-light or cloche, and planted elsewhere. Air must be admitted whenever there is no hard frost by tilting the tops, or placing something under the rim; or in the case of hand-lights with removable tops, by tilting these or twisting them round a little, so as to admit the air. Cauliflowers now turning-in should be examined at short intervals of time, breaking down a leaf or two over the curd, which will generally be sufficient to protect them from injury. If too many are coming on at one time, pull some of them up by the roots when the heads are of sufficient size, and lay them in soil in a cool shed.

Outdoor Tomatoes.—Fruits not yet ripe on plants out-of-doors are not now likely to ripen outside, unless the plants are protected by spare lights or in other ways. In the case of plants in the open quarters, the stems may be carefully bent low down, and cold frames put over them, and by this means a quantity of fruit ripened off that would otherwise be lost. Fruits with a trace of colour in them may be cut, and hung up in a pit having a temperature of 50°, or the stems may be stripped of the leaves, and hung up indoors with the fruits attached, in order to ripen. All the plants in pots at present out-of-doors, for providing winter Tomatoes, must be placed in glass-houses forthwith.

Parsley.—Remove yellowing leaves, and stir the soil between the rows. A lot of the latest-sown Parsley plants may now be pricked out in cold frames, so as to make sure of having nice fresh healthy leaves in the early spring-time, when Parsley is, as a rule, very scarce on the out-of-doors beds.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Preparing Ground for New Plantations of Young Trees and Bushes.—Where the making of fresh plantations of fruit-trees and bushes is contemplated, a suitable site should be decided upon, and the ground selected afforded a good dressing of manure, which may be trenched in a few weeks before planting takes place. The trenching should be done from 1½ to 2½ feet, according to the natural depth of good soil. The soil at the bottom of the trenches should be loosened with a fork or pick, levelling the same in doing so in order to secure a uniform depth of earth. Place a good coating of manure over the loosed subsoil, following this with the top-spit, then another layer of manure and another spit of mould, together with the shovellings of the remaining good soil. In this way, ordinarily shallow soils may be increased to a good depth in the course of a few years, with satisfactory results.

Root-pruning.—Any bush or standard tree which has not yielded good crops of sightly fruit, should be root-pruned forthwith, so that fresh fibrous-roots may be made before the fall of the leaf. Dig a trench from 18 inches to 2 feet from the stem, according to size of the tree, and cut all roots clean off in the process of opening the trench, working the soil away from any tap-roots that may exist, in order to cut them off. This amputation of unnecessarily strong and damaged roots will induce numerous small feeders to push forth to the permanent advantage of

the individual trees operated on. Refill the trenches with some loamy soil, assuming the natural mould to lack fertility. If this is not at hand, a little short-manure should be added to the excavated soil before returning it to the trenches. In the case of wall-trees, or trees growing in cultivated parts of the kitchen garden—that is, fruit-plots in which vegetables are grown among the trees—a mulch should be laid over the roots, extending from the stems to 1 foot beyond the loosened soil, to prevent frost penetrating the roots, and to maintain the soil warm and moist.

PLANTS UNDER GLASS.

By G. H. MARCOCK, Gardener, Laton Hoo Park, Luton.

Gardenias.—Any of these plants which have filled their pots with roots should receive copious supplies of clean water and clear soot-water, and occasionally a slight sprinkling on the surface of an artificial manure. It is, however, advisable not to afford stimulating food to any of the plants which may have set flower-buds, or many of these will drop off. Overhead-syringing must not be done heavily at this season, and only in the morning when the day promises to be fine. The leaves of the plants should always be dry when night sets in. Gardenias require to be kept scrupulously clean, which state is best attained by sponging and dipping them, and occasionally syringing the leaves with soot-water; the soot for this purpose, about one peck, being put into a canvas bag, and immersed in a vessel containing 20 gallons of rain water. This soot-water should be made lukewarm at this season. The temperature for Gardenias may range from 60° by night to 65° to 70° by day.

Bulbs.—Quantities of bulbs in sufficient number to meet the requirements of the establishment may be potted, and afterwards treated in the manner previously advised. *Lilium longiflorum* var. *Harriisi*, if required in flower in the early spring, should be amongst those potted at about this date, using for it a compost consisting of friable loam of good quality, decayed leaf-mould, a small quantity of charcoal, and sharp sand in quantity sufficient to give porosity. A suitable size of pot is the small 32.

Fuchsias.—Cuttings of these plants may still be struck by placing them to the number of five or six in 48's filled with a rich, sandy compost. When rooted, pot them off, and keep them growing in an intermediate-house all through the winter.

Solanum capsicastrum.—Plants growing in the open air may now be potted in 48's and 32's according to size, and be kept shaded for a fortnight. Weather permitting, they may be syringed daily once or twice. The northern side of a cool house suits the plant whilst being re-established.

Salvia splendens, &c.—These plants now require plenty of water at the root, and any that have been in pots all through the season will be benefited by a liberal top-dressing of decayed manure; the variety compacta, as its name implies, is of a bushy and compact habit; and grandiflora is a graceful variety, with long pendulous spikes of bright scarlet flowers. The branches of *Salvia azurea* should be secured to thin sticks. The plant lasts in bloom for many weeks from November onwards, and is a pleasing-looking plant in the greenhouse. The bottom blooms as they get past their best should be pinched off, otherwise decay will spread to the others, even to those not expanded. Afford liquid manure-water occasionally till the flowers commence to open, when clean rain-water only should be supplied.

General Work.—Proceed with the housing of all tender plants, the low temperatures and moisture in the air, now, being unfavourable to them, even should no frosts occur. Water should be withheld from *Hippeastrums*, *Achimenes*, and *Gloxinias*, and the pots containing them placed one above the other on their sides on a dry shelf. The seedlings of herbaceous *Calecolarias* and of *Humea elegans* should, before crowding takes place in the seed-pans, be pricked off into others, and afforded a place on a shelf near the glass, and be guarded against slugs. A similar place should be found for double-flowered *Primulas*; and when watering the latter, do not allow it to lodge in the centres of the plants, or damping-off may result. Gradually reduce the quantity of water afforded *Caladiums*, and when the foliage has died off naturally, the same kind of treatment as that given to *Amaryllis* will suit them—with this difference, that the dormant tubers require stove-heat to keep them from decay.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, SEPT. 30 { Show of British-grown Fruit by the Royal Horticultural Society at the Crystal Palace (three days).

SALES.

MONDAY, SEPT. 27 { Bulbs at Protheroe & Morris Rooms.

TUESDAY, SEPT. 28 { Bulbs, Continental Plants, Roses, &c., at Protheroe & Morris' Rooms.
Annual sale of Conifers, &c., at the Wood Lane Nurseries, Isleworth, by Protheroe & Morris.

WEDNESDAY, SEPT. 29 { Bulbs at Protheroe & Morris' Rooms.

THURSDAY, SEPT. 30 { Bulbs, Roses, Carnations, Hardy Plants, at Protheroe & Morris' Rooms.

FRIDAY, OCT. 1 { Orchids and Bulbs, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—55.2°.

ACTUAL TEMPERATURES:—

LONDON.—September 22: Max., 60°; Min., 51°.

PROVINCES.—September 22: Max., 60°, at Dungen Min., 48°, at Stornoway.

We are indebted to Professor G. HENSLOW for the following remarks on a most important and interesting subject. MR. FRANCIS GALTON has lately contributed a paper to *The Proceedings of the Royal Society* (vol. lxi., p. 401), on "The Average Contribution of each of several Ancestors to the total Heritage of the Offspring," wherein he illustrates and demonstrates the truth of a Law of Heredity, which he had previously stated as probable (*Natural Inheritance*, 1889, p. 134), "because it was then unsupported by sufficient evidence." Thanks to the late Sir EVERETT MILLAIS, who bred basset-hounds for many years, Mr. GALTON has secured sufficient facts to test the accuracy of the law, so far as it applied to the colours of the hounds. The law is, that "the two parents contribute between them on the average one-half, or (0.5) of the total heritage of the offspring; the four grandparents, one-quarter, or (0.5)²; the eight great-grandparents, one-eighth, or (0.5)³; and so on."

He observes that this law is in harmony with the observed facts of embryology, in which there are "binary subdivisions of the germ-cells, with the concomitant extrusion and loss of one-half of the several contributions from each of the two parents to the germ-cell of the offspring;" so that each parent contributing one-fourth is what might on *a priori* grounds be expected to be the case.

The bassets are dwarf blood-hounds, having two recognised varieties of colour, viz., white, with large blotches ranging between red and yellow. This kind is called "Lemon and White," the other has some black in addition, and is called "Tricolor." Mr. GALTON enters them as "T." (tricolor), and "N." (non-t.). Sir E. MILLAIS supplied Mr. GALTON with pedigree records of colours in 817 cases. The colours of all four grandparents were also known in 567. Of 188, the colours of eight great-grandparents were also recorded. Such were the bases for Mr. GALTON's calculations.

His first inquiry was to see if either sex was prepotent, and he came to the conclusion that the dam was prepotent over the sire in transmitting the same colour in the proportion of 6

to 5. The author, however, has accidentally reversed the entries "Sire T., Dam N.," and "Dam T., Sire N.," for his numbers, so that it is not the dam, but the sire which is really prepotent to this small amount. This difference does not affect the law, therefore, sex is not recognised in the calculations.

The problem is to show that if the fractions of the series given above be assumed to represent the contributions of each generation, respectively; then the law will be true if the calculated results correspond with the actual numbers of T. or N. offspring which were born.

Mr. GALTON's first table sets out the actual numbers as received from Sir E. MILLAIS of T. or N. offspring, corresponding to the four combinations of pairs of parents, viz., sire T. and dam T., sire T. and dam N., sire N. and dam T., sire N. and dam N. These are again taken with various combinations of grandparents.

From the table of data he deduced five other tables to illustrate various facts, and in the fifth and sixth puts side by side the calculated total tricolor offspring, supposing the law to be right, and the actual number of tricolor offspring recorded in the first table. The calculations are too elaborate to be reproduced here; all that need be said is, that the "co-efficient" or fraction to be multiplied into the total number of offspring (i.e. both T. and N. together) under each group of ancestry is calculated for each grandparent and great-grandparent or further ancestry, as representing the amount of inheritance supplied by each member of the ancestry. Thus in one case the total number of offspring observed was 118 (T. and N.). By multiplying this by .8342 or by .83 the result is the calculated number of T. offspring which ought to have been born, or 99. The observed or actual number was 100. The reader will also gather how accurate the law is by the following pairs of numbers representing the calculated and observed or actual numbers of T. offspring; when the calculated did not transcend grandparents the numbers were 236, 239; 149, 139; 6, 9; or grand totals 391, 387. Again in table 6, in which pedigrees were utilised up to the 3rd generation, we find the numbers as follows:—53, 56; 52, 56; 9, 9; 8, 6; 49, 46; 9, 8; and grand totals, 180, 181. Nothing could show better the truth of the law than the extraordinary accuracy of the last pair of numbers. Whether this law holds good for all other "elements of heredity," as we might call them, besides the single one of colour, is at present undetermined.

If we now turn to plant-breeding, of course we have no data wherewith to test the law, and it may be questioned whether any really practical value can be attached to it. The belief that the male is more usually prepotent in plants, has perhaps been generally acted upon; for it is a custom, I believe, to take pollen from a good parent for fertilisation, when some special strain is required.

Mathematical calculations, as a rule, are inapplicable to living organisms; partly because the latter differ in very many particulars, and partly because those particulars are correlated together in ways that are imperfectly understood. Hence, though Mr. GALTON successfully proves the law for a single, simple feature, namely for colour, in an otherwise pure strain of animals, it does not follow that the law can be applied with equal success to the ordinary problems of horticulture. Moreover, a new class of questions enters largely into these, which relate to hybridity. Here two

organisms, having different forms of stability, concur in producing a third form, which has a third form of stability. Mr. GALTON has himself discussed this subject in his *Natural Inheritance*.

Hence, if we test the law with multifold crossings in plants, we do not find it so readily traceable in the features of a single offspring, as he did in the number of offspring of the same colour.

First consider a single species, say the Fox-glove. All individuals (apart from the usual "individual" and trivial differences) are practically exactly alike. The law may be present, but it cannot be detected; the result is the same as if each parent contributed one-half.

In the case of first hybrids, though each parent may contain the sum of its ancestral series of precisely similar beings, yet the result, as seen in the structure and form, &c., of the hybrid offspring is not always equal to one-half—though reciprocal hybrids are mostly alike—for it often happens that the features of one of the parents predominate, though no universal rule exists as to any regular prepotency in either sex. Again, in comparing the visible features of hybrids with those of their parents, it is impossible to estimate the relative contributions, mathematically; for a part of a flower, for example, of the hybrid offspring may resemble the same part in one parent, while another part of the flower will be like that of the other parent. Thus, when *Rhododendron jasminiflorum* (with a white, long-tubed, small-limbed corolla) was crossed with *R. javanicum* (having a short-tubed, broad-limbed, orange-coloured corolla), the offspring, "Princess Royal," shows a broad limb, a long-tube corolla, and the orange-tint has not been contributed at all, the colour being rose-pink.

With regard to colours, it often happens that several offspring from the same pod will vary greatly in colour. Thus, when *Rhododendron Lobbi* (crimson) was crossed with *R. Brookeanum* (straw-coloured), the offspring were crimson-scarlet, red-orange, and primrose-yellow, varying to pale salmon.*

Hence the parental colours, which ought theoretically to have been representable by $\frac{1}{2}$, cannot be so represented if there are various colours, or various depths in the tint, if the colour be the same, as is often the case.

When a cross is recrossed to its third, fourth, or a later generation, as is frequently done among florists' flowers, though a calculation as to the relative amounts of inheritance which should be contributed by each member of the ancestry respectively, can readily be made, yet the visible results do not appear to correspond with them. Thus, to take an example, the hybrid *Rhododendron* "Little Beauty" contains five species. Its pedigree is as follows:—*R. jas.* × *R. jav.* (= *Pr. Rl.*); *Pr. Rl.* × *R. jas.* (= *Princess Alexandra*); *Pr. Al.* × *Duchess of Edinburgh* (= *R. Lobbi* × *R. Brook*; *Monarch*); *Mon.* × *R. Malayanum* = *Little Beauty*. Altogether there are here five generations, so that the amount of heritage contributed by each species would, according to Mr. GALTON's law, be approximately—

Jas., $\frac{1}{32}$; *Jav.*, $\frac{1}{64}$; *Lob.*, $\frac{1}{32}$; *Brook*, $\frac{1}{32}$; *Mal.*, and its ancestry, $\frac{1}{2}$.

Now, when we examine the visible results, we find that "Little Beauty" is almost identically the same as *R. Malayanum*. The colour

* "Hybrid *Rhododendrons*," by Rev. G. HENSLOW, *Journ. Hort. Soc.*, xiii., p. 30.



FIG. 64.—VIEW OF THE ROCKERY IN SIR CHARLES ISHAM'S GARDEN, LAMPFORT HALL.
(Dimensions of structure Height, 24feet; length, 70 feet; and breadth, 47 feet. See p. 209.)

and form are the same, though the latter is a trifle larger in the hybrid. The leaf is slightly truncated, such being apparently the only feature visibly inherited from any one of the other species, viz., *R. jasminiflorum*.

This case illustrates another, and by no means uncommon fact, that if two species be crossed, and the female parent may bear offspring, there may be no trace whatever of the male parent, the female being absolutely prepotent. In these cases, therefore, the law would seem to fail; or at least it is not traceable in external appearances.

Again, if the anatomical structures of the two parents are at all markedly distinct, their corresponding differences may be detected in a state of combination by a microscopical examination of those of the hybrid, as Mr. MACFARLANE has so well shown. In the case of Mr. VEITCH's hybrid *Rhododendrons*, I compared in every possible way the tissues of the stems and leaves of the parents and first hybrids; and there was rarely any appreciable difference whatever in their anatomy. I thus obtained almost purely negative results. This appeared to be due to the fact that these species probably live under much the same external conditions, so that the texture of the vegetative organs are the same; so that while in Mr. MACFARLANE's case some rough application of the law might possibly be attempted, nothing would follow from the above species of *Rhododendron*.

Finally, the only practical deduction which strikes me at present is, that the oftener the offspring of hybrids be crossed with new forms, the retention of any particular feature is proportionally lessened, and is soon practically lost; though, how far it may be retained "in the blood," and re-appear by atavism, it is impossible to say. That each parent of a cross will necessarily contribute exactly one-quarter of any special feature in the offspring, does not appear to be sustained by facts.

Potato Disease in Ireland.

REPORTS have for some time past been current that, owing to long-continued bad weather, certain districts would be, and were being, overrun by the Potato disease. And it is reported that ruin stares in the face many an Irish cultivator, who has lost his Potato crop, and that assistance will have to be given in many instances to ward off starvation. Truly, this is a most unfortunate condition of things, and the prospect of extirpating the disease a very poor one, as it is but too likely that the small holder will gather up all the refuse he can, in order to make up a muck-heap for distributing over his small parcel of land when he can procure sets—for these sets will be furnished him goes almost without saying. Of course, there are Potatoes with a good reputation as disease-resisters, as well as many with a bad one; and to-day we give the names of three varieties sent us by a northern farmer, who speaks highly of them as offering the strongest amount of resistance to the blight. The names of these, are "Up-to-Date," a heavy cropper; "British Queen," a good second early; and "Challenger," a new Fife-shire production well spoken of, but comparatively dear, as the stock of it is at present small. Good friends to the cotter and crofter in the Sister Isle will be those who get him to thoroughly cleanse his land and burn all the refuse that can be consumed. Such advisers will also see to the purchase of the very best sets; and the

local "authority" will well supplement his labours by furnishing such cultural instruction as may be best suited for the poor, suffering tillers of the soil.

THE ROYAL HORTICULTURAL SOCIETY'S Show of British-grown Fruits will be held at the Crystal Palace, Sydenham, on Thursday, Friday, and Saturday next. A conference on "Progress" will be held on each of the three days, and papers read: that of Thursday being by Mr. G. BUNYARD, and entitled "Progress in Fruit Cultivation during the QUEEN'S Reign." That on the following day, by Mr. A. W. SUTTON, will deal with the progress in vegetable cultivation during the same period of time; and the paper to be read by Mr. J. ASSBEE on Saturday will illustrate the progress made in market gardening. In view of the moderate crops of hardy fruits this season, the exhibition may not be so large as last year, but there will surely be a good show. A cold luncheon for gardeners will be provided on Thursday, at which the Council, judges, and lecturers will be present. Other persons interested in the show may obtain tickets for same from the Secretary before the 29th inst.

ROYAL BOTANIC GARDEN, CALCUTTA.—The Report from the Curator, Lieut.-Colonel KING, of the Royal Botanic Garden, Calcutta, for the year 1896-97 is one of considerable disaster, the garden having suffered greatly from the drought, which followed that of the year 1895-96. Much useful work has, however, been done in the cultivation of economic plants, the investigation of the flora of British India, and the enrichment of the herbarium. A monograph has been published of the Indian species of *Bambusa* by Mr. J. SYKES GAMBLE.

POMOLOGICAL SOCIETY OF BOSKOOP, HOLLAND.—The Plant and Fruit Committee awarded at a recent meeting the following First-class Certificate: to *Glyceria spectabilis folia argentea variegata*, shown by Mr. K. WEZELENBURG, Hazerswoude, Holland; and to crosses of *Clematis integrifolia* and *C. viticella*; namely, *Königin Wilhelmina*, *Hortulanus Wilke*, *C. H. Joosten*, and *C. van Kleef*, shown by Mr. C. VAN KLEEF, Boskoop. Second-class Certificates were awarded to climbing *Rose Carmine Pillar*, and to *Daphne laureola folius atro-purpureus* shown by Mr. K. WEZELENBURG, Hazerswoude; and to crosses of *Clematis integrifolia* and *C. viticella*, namely, *Queen Victoria*, *President Carnot*, *C. de Vos*, *Félix Faure*, *President Cleveland*, *M. van Kleef*, *Kaiser Wilhelm*, *Wm. E. Gladstone*, *Prins Hendrik*, *Hortulanus Witte*; shown by Mr. C. VAN KLEEF, Boskoop. P. A. OTTOLANDER, chief Secretary of the Pomological Society, Boskoop.

THE ISLE OF WIGHT.—On Wednesday, Sept. 15, the East Cowes Horticultural Society held an exhibition of Tomatoes, followed by a discussion opened by Mr. C. MARTIN, Clarence House Gardens, on the best methods of cultivation, and the most suitable varieties for indoor and outdoor planting.

—The Isle of Wight Horticultural Improvement Association took their third and last outing for the season at Swanmore Park, Hants, on Sept. 16. The party was received by Mr. E. MOLYNEUX, and conducted over the kitchen, fruit, and flower-gardens, the vineries, stoves, &c.; and last, but not least, the *Chrysanthemums* were inspected. The sub-tropical bedding and the rock-garden were much admired. The colour of the Apples in the orchard was excellent. The effects of planting the trees on the surface, and of thinning the branches instead of too much shortening back or pruning, were noted. The *Chrysanthemums*, of course, were especially interesting, and much time was spent in observing the habit of growth, &c., of some of the newer varieties. The party returned to the garden Isle much interested by their visit to Swanmore, where they had been most kindly entertained both by the proprietor, Mr. MYERS, and his gardener and steward, Mr. E. MOLYNEUX.

FLOWERS IN SEASON.—From Messrs. TOWNSEND BROS., Bloxham, Oxon, we have received a few blooms of new varieties of decorative and single-flowered Dahlias. The best of the decorative varieties is *Monarch*, an intense crimson-coloured bloom of large size, and the habit is described as good. The others possess pretty tints in colour. *Favourite* is a single flower of much attraction, the white petals being margined with pure orange. *Speckled Gem*, also single-flowered, has petals of crimson and yellow, promiscuously associated, giving the blooms a much-speckled appearance.

THE HARVEST IN SCOTLAND.—The *Dundee Courier* of September 16 gives reports collected from farmers in every county of Scotland, regarding the yield of the season's harvest. These reports are all of a satisfactory character. The yield of Barley is described as much above the average, and the quality excellent. Wheat and Oats were also very good crops. Turnips promise to be an exceptionally heavy crop, though the yellow variety in some districts is suffering from want of moisture. Potatoes are not a heavy crop, and there is not much evidence of disease. Beans and Peas have turned out well.

TORQUAY AND DISTRICT GARDENERS' ASSOCIATION.—The programme has just been arranged for the ensuing winter session of this body of gardeners. The session will commence on September 25, with the Presidential address from Dr. I. Hamilton Ramsay, a staunch supporter of the Society. Among those who have promised to contribute papers during the winter are Mr. A. H. WHIFFLA, M.A., B.Sc., Staff instructor in science and agriculture to the Devon County Council; Mr. F. W. MEYER, landscape gardener to Messrs. R. VEITCH & SONS, Exeter; and Mr. GEORGE BEDFORD, Head-master of the Torquay School of Art.

A STRIPED GLOXINIA BLOOM.—That flowers of the *Gloxinia* show much variation in their markings is well-known, and many strains have a ring or margin of colour different to that of the corolla and are furnished with very beautiful forms of spotting on the lobes, and for some distance down in the tube. But less common is it to find a flower of this type with white, descending markings as observed in some species of *Convolvulus*, such as has been sent to us by Mr. BREWER, gardener at Oaklands, St. Albans, which is a variety worthy of perpetuation by leaf-cuttings.

SALVIA SPLENDENS VAR. GRANDIFLORA.—The brightest thing at the last meeting of the Royal Horticultural Society's meeting was undoubtedly the groups of the above plant from Mr. HUDSON, Gunnersbury House Gardens, and Mr. H. B. MAY, Edmonton. Most gardeners are acquainted with the type, which they value for its bright scarlet colour at this season, when so few flowers of that colour exist under glass; but few know anything of the *grandiflora* variety, which is a much showier plant, having longer flower-spikes, which being consequently heavier, they droop somewhat, giving to the plant more gracefulness than is possessed by the type. The plants shown by Mr. HUDSON were in 10 inch pots, and had stood out-of-doors the whole summer in a sunny part of the garden at Gunnersbury House, Acton. They are the produce of spring-struck cuttings, and were twice stopped—the second time being early in July.

THE BROWNING OF PLANTS.—The so-called browning of plants—*Brunissure* of the French—a mysterious fungous disease until recent years uninvestigated, and so far as our knowledge goes, not wide-spread in this country, but met with occasionally on the Vine and a few other plants, is prevalent on the following plants in France according to M. DEBRAY, and whose statements are quoted by M. E. ROZE in a communication on the subject sent to the *Journal de la Société Nationale d'Horticulture de France*, and inserted in last month's issue. Among others, the following genera and species were mentioned as those on which *Plasmiodiophora vitis* had been found, *Hepatica triloba*, *Cynoglossum*, *Omphalodes*, *Papaver bracteatum*, *Tradescantia virginica*,

top, through which to pass a piece of galvanised-iron wire strained tight from each end), if placed down each row, will keep the netting off the leaves, and allow of the fruit being picked without removing the net. I should like to advise the planting of a good stock of plants of *R. laciniatus* in all gardens, as Blackberries are palatable to most persons, and they are excellent mixed with Apples in tarts or puddings. With a few Apples added, they make a very toothsome preserve. *Geo. Woodgate, Rolleston Hall, Burton-on-Trent.* [We recently observed *R. laciniatus* fruiting very freely upon a slope in Messrs. Cannell's nursery at Eynsford. The fruits, unless quite ripe, are very hard, but when cooked they are described as delicious in tarts and as preserve. Ed.]

WASPS.—I noticed in last week's issue that at Normanton, Stamford, wasps are very numerous and troublesome. In this district I have not yet seen a young wasp this year. What can have become of the queens that were very numerous early in June? A similar circumstance happened some years since at Mereworth, but on that occasion I attributed the loss of the queens to an early spell of very warm weather being followed by a sudden change to very cold weather. That was, however, not the case this year. *H. Markham, Northdown, Margate.*

—Your correspondent, Mr. John Butler, in order to save his fruit, cannot do better than continue a search for the nests of the wasps, giving to the men employed in the search a bottle containing dissolved cyanide of potassium, with instructions to push a piece of cotton-wool soaked with the solution into the entrance of each nest that they find, and the effect will be at once to prevent the passage of wasps either in or out of the hole. Some few years ago when making alterations in a gentleman's pleasure-ground near Macclesfield, my assistance was solicited in eradicating what became quite a plague of wasps; and knowing that the *Gardeners' Directory* gave a recipe for the purpose I procured it, and soon destroyed upwards of fifty nests with the substance above-mentioned. The operator need have no fear as to its effects on the insects, the poison being of a most deadly kind; and I destroyed the nests at any hour of the day. *T. Reid, Wentworth Nurseries, Hexham.*

A GARDEN OF ASTERS.—A rather novel form of summer-bedding has been adopted this year at Cliveden, the residence of the Hon. W. W. Astor. Owing to the nature of certain requirements, it was necessary to retard the spring bedding-plants as much as possible, so as to obtain them in the best condition in June. After this time, the flower-garden would be little seen until September, owing to the absence of the family, and it was suggested by Mr. Wadde, the gardener, that the beds, which are large, and lie a considerable distance from the mansion, should be filled with annual Asters in distinct colours. To this end a quantity (about 30,000) was raised in frames, and as soon as large enough pricked off in borders in the open, and thence to the beds. These are now just at their best, and the great masses of soft colours are very effective. The long waved border under the terrace is filled in with lines of distinct colour, following the outline of the border, the plants average not more than 6 inches in height, and they are full of flower. The varieties used in this part are Snowball, dwarf lilac, white Bedder, light Blue, and *delicata*, and the angles at the back are filled in with a scarlet coloured variety, a thousand plants being used in each line. The larger beds are planted in pairs with one colour, viz. Peach Blossom; white changing to blue; white changing to rose; red and white striped; white bedder, and purple; while a large distinct circle is filled-in with crimson and white variety, having a blue centre. Very few stray colours were to be found, which testified to the purity of the strain of Asters used. *C. Herrin.* [What have declaimers of the "massing" system to say to this? Ed.]

ENGLISH AND GERMAN ASTER SEED.—The reference made in last week's issue to Aster seeds raised at home and in Germany induces me to say that I have this season been enabled, through the kindness of Mr. Cannell, who sent me small packets of ten varieties of his home-saved seed, and of Messrs. Dobbie & Sons, who gave me, for the same trial, both their home-saved and best German imported seeds, to test them fairly on a plot of ground at Surbiton, where the seeds were sown in April in small clumps. I sowed the German seeds in the centre of the border, and the Eynsford and Orpington

seeds at either end, labelling each, and found, when they bloomed, that the home grown Asters were absolutely as good as the German. *A. D.*

THE SOUTHERN COUNTIES CARNATION SOCIETY.—The letter that appeared in the *Gardeners' Chronicle* for September 18, p. 204, signed "An Old Florist," is neither just nor generous. He appears to entertain the idea that no one can do a kindly action without deriving some pecuniary benefit in doing so. Now it so happens that Mr. Wm. Garton, jun., is a very high-principled gentleman, respected and beloved by all who know him—a member of the well-known wealthy firm of Garton & Co., and a great and liberal patron of horticulture; but his chief hobby is the cultivation of the Carnation, which he is endeavouring to bring to the fore by promoting a society, offering handsome prizes, and presenting plants of the best sorts, to anyone who would like to join the society. Of course, it is perfectly ridiculous to imagine that Mr. Garton is desirous of getting any pecuniary benefit from the society, his only object being (a truly good and philanthropic one) to set it going; and that it will prove a success under such favourable auspices, there can be no doubt. I think "An Old Florist" should not have expressed himself in the way he has done, without any just foundation whatever; and if he has any right feeling, he ought to apologise for having done so. *W. H. Rogers, J.P.*

TROPICAL NYMPHÆAS IN THE OPEN AIR.—I have been successful in flowering *Nymphaea capensis*, *Nymphaea Devonensis*, and *Nymphaea cyanea* in the open air this summer, at the end of a stove-pit in the open air, where I had made a brick-tank about 6 feet square and 2 feet deep, in the bottom of which 6 inches of mud was placed, and the tank filled up with warm water. To keep the water warm, a small pipe was attached to the air-tap of the hot-water pipes in the pit, so that I was enabled to have a little warm water flowing constantly into the tank, and keep the water at about 70°. After the water had been in the tank about ten days, I sank a very small plant of *Nymphaea capensis* to the bottom, it being first planted in an Orchid-pan; in a few days the foliage had reached the surface of the water, and very shortly afterwards it began to show its flower-buds (this was the early part of June), and at the end of that month several fine flowers had opened, from which time till September 20 we have had from seven to ten fully-expanded flowers daily on this plant. Later in the summer I planted *Nymphaea Devonensis* and *Nymphaea cyanea*, which have flowered equally well; and all being well next summer, I intend to make a larger tank, and plant out other tropical species. *W. J. Townsend, Sandhurst Lodge, Wokingham, Berks.* [These plants are being cultivated in open-air tanks in many parts of the country. Ed.]

EARWIGS.—These creatures are, as every gardener knows, very destructive to Dahlias, Zinnias, Verbenas, &c.; but knowing their aversion to moisture, it occurred to me to thoroughly moisten these plants overhead every evening after dusk, and the results proved highly satisfactory, not a single plant so wetted being injured by them. This was discontinued after the plants were established and making rapid growth. *W. H. Aggett, 70, St. James' Road, Bermondsey, S.E.* [Were the earwigs not troublesome afterwards? Ed.]

A WARNING.—Several allotment holders at Kent House, Beckenham, have this season lost portions of their produce, and the police have failed to make any arrest. One allottee evidently intends taking the law into his own hands, for he has put up a board with the following notice—"The Lord Helps those who help themselves; but, the Lord help that man I catch helping himself to my Marrows." *M. Webster, Kelsey Park Gardens, Beckenham.*

DAHLIA FLAMBEAU AS A BEDDER.—This is a grand variety for bedding purposes; in fact, it possesses every good quality. The plant attains a height of about 3½ feet. In colour it is scarlet, of a beautiful shade; and the blooms stand well above the foliage. It is, perhaps, the earliest Dahlia to come into bloom. Three large beds are filled with it this season at Hampton Court, and the effect produced is brilliant in the extreme. *W. H. A.*

CRESTED BEGONIA BLOOMS.—I was much interested in the bloom of the single-flowered crested Begonia in last week's *Gardeners' Chronicle*, and send for your inspection a double form of Begonia, which, when more fully developed is capitally crested. The enclosed is a small bloom from a nearly exhausted plant. You will notice it

has a good firm upright stem. The better developed blooms showed the crested much better. *F. Goss.* [The bloom, an exceedingly double one of large size, was distinctly crested on many of its petals. Ed.]

CHRYSANTHEMUM LEAVES DISEASED.—Under this heading a reply is given to a correspondent at p. 208. I gather from the reply that the leaves referred to were largely devoid of chlorophyll, and yellow in colour. There are some varieties that seem to show this yellow colouration when outdoors, under the best culture. I have noted it in several fine collections. Looking over one the other day in company with an experienced grower, he remarks that some of his plants showed the same golden hue in the leaves, but he found, after housing, that the green colour all came back again. That is an interesting fact. Perhaps the leafage suffers from too low a temperature outdoors during the autumn nights, and prefers the warmth of a greenhouse. Perhaps the excess of strong sunlight to which subjected during the summer is detrimental; evidently, it is an interesting case in plant physiology. *A. D.*

MR. HARRISON WEIR'S GARDEN.—I am somewhat mystified by the curious letter of Mr. Thomas Fletcher, re my garden. I do not understand what his planting a Potato fifty years ago and daily digging it up has to do with my planting my garden, but I do believe that I clearly understand some of his remarks. Here is one: "The best man in the world is hampered if he can only get a flat field with a barbed-wire fence (what has the barbed-wire fence to do with it!); the place must be ready-made for him, the trees must be of good size, and he must succeed someone." In making my garden, I have not succeeded someone else; nor do I consider it needful for a garden to have trees of a good size, but trees are necessary for pleasure-grounds and shrubberies. A garden is cultivated, a shrubbery "well ordered." "Few gardens can be made in a life-time, and in any case, a good deal of knowledge is required. Very well! Then I have done something that only few can do, for "Weirlegh" at Brenchley, Kent, was a wheat-stubble when I bought it, and when I left, it was very favourably noticed by most of the "gardeners" press as something uncommon. It may perhaps come as a matter of surprise to Mr. Thomas Fletcher to learn that my garden seven years ago was an utter waste-piece of ground, and the part photographed was a rough patch of grass lying in a hollow below the road, and a place where much of the sweepings and refuse of the villa gardens was brought and shot into—in fact, what is often termed "a muck-heap." This is the part shown. Below this was a small space and five Oak trees (not in the photograph), then a mound made by the waste of a stone quarry called "tip" being shot there, and below it a flat piece of ground, and to this the public having access at all times, they had dug up and carried off every Fern or wild flower that existed there. The ground slopes towards the south-west, in some parts precipitately. And so unpromising was the place to do anything with, that it and the new house stood empty for five years, neither it nor the land having been occupied, or even the latter fenced-in. Such was what I had to deal with. Whether I have any of the knowledge that is required I do not pretend to say, but it will be at once seen that I have not succeeded anyone else, as Mr. Thomas Fletcher says, at least I ought to have done. He says further, that "neither Mr. Harrison Weir nor anyone else could have made such a place as is shown in the photograph, unless his predecessor had planted the trees, and Nature provided crooked places and big stones." As I have said, this part was a rubbishy place, and I made the twisting paths, banked it about, and the rocks were brought by cart from a neighbouring quarry, and placed by hand as shown. All the trees have been planted according to my directions, and after about six years' growth they have been photographed. There are more photographs taken of different parts of the garden, all of which show that every part differs much from the other, and is generally unseen when a bend or turn is made in the paths. As to the wild flowers and plants, they have all been brought to it. About 2 oz. of Primrose seed have been scattered, and *Digitalis*, Poppies, and many other seeds; also nearly 10,000 *Daffodils* have a home and resting-place about the banks, &c. Those who have seen the place as it now is, have been kind enough to tell me "they" thought it beautiful; and to me, of course, it is so. With all the rest that Mr. Thomas Fletcher has written as to what a garden should be, &c., I agree, as it is one of the principles on which my garden is planned. Mr. Thomas Fletcher, however, states that spaces are to be left

between the herbaceous plants for annuals and half-hardy plants. With these I will have nothing to do. There are no annuals or bi-annuals but the wild flowers—no others; all others are perennials, low, and tall-flowering plants, &c. He also says that, "Every day without exception there should be something of interest for all comers, and good flowers to be always available." This is much the case for many months in my garden; but I do not care much for outdoor flowers when the frost is about, the ground frozen, and the winds keen and cutting. At all other times let there be flowers, and those in plenty. As to the volunteered opinion of Mr. Thomas Fletcher that "A collection of fowls can be got together in a year," I beg entirely to differ with him—no; nor in twenty years. My fowls come of stocks that date back far beyond half-a-century. It takes a lifetime to breed a good and true strain of high-class poultry. In conclusion, allow me to tell Mr. Thomas Fletcher that my garden is my garden in all senses. It was no garden about six years ago. I bought the land for a garden, planned it, planted it, maintained it. "It is all mine, and I am proud of it." *Harrison Weir.*

THE LATE MR. J. COCKER.

In the last issue of this journal, the demise of Mr. J. Cocker, nurseryman, of Aberdeen, was briefly recorded; it was there stated he was at the time of his death the senior partner of the firm of Messrs. Jar, Cocker & Sons, nurserymen, of Aberdeen. He had taken no active part in the business for nearly two years owing to a paralytic seizure; and latterly he has been a sufferer from other maladies. The deceased served his apprenticeship as a gardener and nurseryman with his father, who had started the business that was afterwards so greatly developed; he then for some time served as a journeyman at Cloncaird Castle, Ayrshire, and subsequently he obtained a situation as gardener near Croydon, remaining there for several years. During this sojourn in the south, he was paying great attention to the nursery business as then carried on around London. About twenty-six years ago, he joined his father in the business which now bears their name; and ten years afterwards, on the death of his father, he took his three sons, James, William, and Alexander, into the business as partners. He made a special study of "Florists' Flowers," and in conjunction with others encouraged a taste for some species which were fast on the wane in the estimation of gardeners.

In the cultivation of the Pansy, Phlox, and Pentstemon, he took the lead, and was fortunate in being the raiser of the first blue show Pansy, "Sunny-park Rival," which still ranks as one of the best, if not the best of its class. He devoted attention to the very beautiful and useful bedding Pansies, the descendants of crosses of *Viola cornuta*, recognising their good qualities as bedders and continuous bloomers; although I cannot claim for him the honour of having done the most in this connection, which honour justly belongs to Mr. P. Grieve and the late J. Downie. He was a successful cultivator of Roses, and the firm, under his far-seeing guidance, began about sixteen years ago to make Rose-growing a specialty, and their name has since become a household word in this branch of the nursery business throughout the country.

Much to the surprise of his fellow nurserymen, the cold and apparently ungenial climate of Aberdeenshire was made to produce Roses as fine as any in Scotland, or, indeed, out of it.

The almost universal use, at that time, of the Manetti Rose as a stock did not meet with Mr. Cocker's approval, and at great expenditure of time and money, he set himself the task of discovering the best kind of stock for each section and variety of the Rose. And it was owing to the experience thus gained, combined with high cultivation, that Cocker's Roses took the leading prizes at most of the horticultural shows in Scotland, and at some continental ones likewise. Another branch with which the name of the deceased will long be identified, is the cultivation of and bringing into prominence many fine species of herbaceous perennials which for a long time had been ignored. His two sons, William and Alexander, will continue to carry on the business as heretofore. *C. S. France.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 21.—An ordinary meeting of the committee took place on Tuesday last in the Drill Hall, James Street, Westminster, when the display of exhibits was almost equal to the capacity of the building. Such an exhibition of Dahlias is seldom made under the auspices of this society. Nearly all the trade growers of the flower were represented by large collections of blooms, and several amateurs contributed equally imposing exhibits. Novelties were numerous, and these secured as many as sixteen Awards of Merit. The consideration of new Dahlias was the greater part of the work before the Floral Committee, and beyond these very few awards to new plants were made. There was an excellent display of Gladioli, several exhibits of Chrysanthemums, and an extensive show of Roses grown in the open at Waltham Cross. Before the Orchid Committee was an exceptionally interesting Vanda from Messrs. LINDEN, Brussels, and a few other novelties. The exhibits of fruit were uncommonly few.



THE LATE MR. JAMES COCKER

Floral Committee.

Present: W. Marshall, Esq., Chairman and Messrs. H. B. May, Chas. T. Drury, R. Dean, J. H. Fitt, Geo. Stevens, J. F. McLeod, J. Jennings, Thos. Peed, R. B. Lowe, Chas. Jeffries, J. D. Pawle, D. B. Crane, Ed. Beckett, Geo. Paul, J. W. Barr, and J. Fraser.

Groups of miscellaneous foliage plants were put up by Messrs. JNO. LAING & SONS, Forest Hill, London, S.E., and Messrs. J. PEED & SONS, Roupell Park Nurseries, Norwood Road, S.E. In the collection from the latter establishment were a few Caladiums, some well-coloured pretty Crotons, the handsomely marked stove-plant *Leea amabilis*, several ornamental varieties of *Begonia Rex* and plants of *Dracena Sanderiana* (Bronze Banksian Medal).

Messrs. LAING's exhibit was a larger one, and it contained a number of excellent Crotons of moderate size but rare in colour; also some varieties of Cordylines with coloured leaves, as Lord Wolseley, A. Laing, and others; Ferns, Caladiums, several Gloxinias, a number of plants of the pretty *Saxifraga sarmentosa tricolor superba*, &c. (Silver Banksian Medal).

An excellent display of cut Roses was shown by Messrs. W. PAUL & SONS, Waltham Cross Nurseries. Roses thus remain in season a considerable time after the first Chrysanthemums have been exhibited. Of Queen Mab, a new China Rose, of rich salmon-apricot colour, there were excellent sprays of bloom; and of Empress Alexandra of Russia, Medea, and others, many of which have already been Certificated. Old Roses, including H.P.'s, Teas, Noisettes, and China Roses, were shown in a large number of varieties,

some of the Teas including Marie Van Houtte, Sylph, and Niphetos, being very pretty in their autumn buds. The distinctly-coloured Noisettes, William Allen Richardson and Madame Pierre Cochet, &c., were well shown (Silver-gilt Banksian Medal).

An Award of Merit was recommended to Cordylina Russell, shown by Mr. J. Russell, Richmond. It has narrow leaves, dull brown in colour, with midrib of very dull yellow.

Mr. THOS. LOWTON, Faversham, was recommended an Award of Merit for a variety of *Primula obovata* with imbricated flowers. The peculiarity, however, needs further development to become effective.

From Messrs. ROBERT VITCH & SONS, Exeter, was shown a plant of *Fuchsia triphylla* (type), and several plants of *F. t. superba*, which has crimson flowers of much larger size.

Messrs. JAS. VITCH & SONS, Royal Exotic Nursery, Chelsea, exhibited three very ornamental grasses—*Gynurus argenteum*, with fine erect plumes of pale purple colour; *Molinia caerulea variegata*, similar to the type, except that the foliage is variegated; and *Apera arundinacea*, with slender, drooping flower-stems, 3 feet or more in length. The general appearance of the plant is most graceful, and would be especially suitable for planting in a basket (First class Certificate). A very ornamental Vine, with conspicuously-coloured foliage, was exhibited. A nice plant of *Retinospora obtusa sulphurea* was awarded a First-class Certificate.

Salvia splendens grandiflora was capitally exhibited by Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton. The plants formed a bright, almost dazzling group, and this was well margined by pretty varieties of *Adiantum cucullatum* (Silver Banksian Medal). Mr. J. Hudson, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton, was awarded a Silver Floral Medal for an excellent group of the same *Salvia* in flower.

A number of diverse varieties of seedling Fuchsias was shown by Mr. P. FAY, Addington, West Malling, Kent. The plants had been raised from seed sown in gentle bottom-heat about the middle of February last. They were planted out in the open in May, and lifted and placed into pots during the last week in August. Some of them were 2 feet high, and as much through.

A magnificent collection of spikes of Gladioli was shown by Messrs. J. BARNELL & CO., Howe House Nurseries, Cambridge. About 120 spikes were included in this exhibit, and the whole of them represented fine varieties. Many new ones and some unnamed seedlings were staged, but it would be invidious to select any for special mention from such a collection; a Silver-gilt Flora Medal was awarded.

Messrs. WM. COTSWELL & CO., Highgate Nurseries, London, N., showed a few plants of *Cornatou*, Princess of Wales, a variety of the Malmesbury type, also a number of sprays of the dark purple-fruited *Phytolacca decandra*, flowers of *Aster acris*, &c.

Fine sprays of the new *Physalis Francheti* came from Messrs. H. CANNELL & SONS, Swanley, Kent, and from Messrs. F. SANDER & CO., St. Albans.

A capital group of Chrysanthemums of the variety Lady Mary Fitzwigram, a good white-flowered decorative Chrysanthemum, very free and suitable for market, was shown by Mr. G. WYTHES, gr. to Earl Percy, Syon House, Brentford. A few plants of *Lilium Harriett* in bloom, and plenty of decorative foliage plants, helped to make the group of pleasing effect. (Silver Flora Medal).

An exhibit of cut Chrysanthemums was staged by Mr. W. J. GODFREY, Exmouth Nurseries; and he had twelve large blooms of the yellow-flowered Japanese W.R. Prince, one of Mr. Godfrey's seedlings. Other varieties included Lady Esther Smith, Barbara Forbes, Milano, Miss Emily Silsbury, Miss Oxenham, Madame Gustave Henry, Lady Kennaway, &c. Naturally, some of the blooms were a little deficient in colour.

An Award of Merit was recommended to Japanese Chrysanthemum Mychett White. It is said to be a fine market variety, and flowers early. A dozen good blooms were shown by Mr. M. RUSSELL, Farnborough.

A group of Chrysanthemums in flower, with ornamental foliage plants interspersed, was shown by Mr. J. H. WITTY, Nunhead Cemetery, London, S.E. Most of the varieties included were of the early-flowering section (Silver Flora Medal).

Mr. E. F. SUCH, of Maidenhead, had a group of cut flowers in bunches of early Chrysanthemums cut from out-of-doors. Of the numerous varieties, the following were best:—Harvest Home, Eulalie Morel, pink; M. C. Desgranges, Long-fellow, white, an excellent variety for cutting from; Madame Carniflage, white, petals long and drooping; Pieroy's Seedling, Mdle. M. Massey, and Blushing Bride (Bronze Banksian Medal).

A very fine show of hardy flowers was made by Messrs. PAUL & SONS, Old Nurseries, Cheshunt, obtaining the award of a Silver Flora Medal. The better things were new Phloxes, apparently of continental origin, viz., Miss Pemberton, cherry red, with flowers 1½ inch across—very showy (Award of Merit); Ferdinand Cortez, a magenta-coloured variety; Joseph Burton, one of a rosy-crimson colour, also very nice; Coquillet, a bright looking scarlet flower, of large size; Jav. nase, a lilac and white flower; Eclairer, a purplish-crimson-coloured flower; Regulus, a soft pink-flowered variety; and Fantome, a flower of lilac and white. Other flowers in fine condition were *Aster* (perennial) *Novae Angliae* var. *pulchella*, deep purple; *A. Novae Belgii* var. *lurida*, and *A. N. B. levigatus*, of rosy-lilac colour; *Funkia subcordata grandiflora*, which differs from the type in having large flowers; *Aster Bessarabicus*, with capitally-developed

broad-petalled reflexed flower; and W. R. Prince, a large, reflexed Japanese, with the deep colour of Sunflower, but darker, and broader in the petals; this is a very promising variety, and the committee expressed a wish to see it again. A small Silver Medal was awarded to Mr. GORREY for his collection of blooms.

A meeting of the general committee took place at Anderson's Hotel on the 20th inst., Mr. T. W. Sanders presiding. The secretary presented a report of the medals awarded to miscellaneous exhibits at the recent show; and also reported the financial position as satisfactory, members' subscriptions coming in well. A sub-committee was appointed to make the preliminary arrangements for the annual dinner in November. Twelve candidates for membership were elected, and the North Canterbury (New Zealand) Chrysanthemum Club was admitted to affiliation.

THE BRITISH MYCOLOGICAL.

The first "Annual Week of Fungus Foray" of this Society was held in Sherwood Forest from 13 to 18 September, 1897. As the Society was only founded last year, some little curiosity was felt as to how it would carry out its proposed scheme of working the mycologic flora of Sherwood Forest. Devotees appeared in Workshop from the north, from the south, from the east, and from the west of England in good numbers, and during the week excursions were made in various directions from this centre.

The present writer has taken part in many fungus forays; he has seen one generation of mycologists pass quite away and join the majority, while many others have dropped from the ranks of the working fungologist incapacitated either by illness or by age, old friends and old faces have gone and are missed, but it is a pleasant thing to see a new generation, brimful of youth and overflowing with enthusiasm, plunging into the study with that keen zeal which is so essential to those who would master the hymenomyces. Circumstances prevented the writer from hearing the presidential address of Mr. G. Massee, on "Mycological Progress during the past Sixty Years," but it would, without doubt, be appropriate and eloquent, coming from the distinguished author of the *British Fungus Flora*. The Society is fortunate not only in its president but even more so in its Secretary, Mr. Carleton Rea, whose great practical knowledge of fungi on the one hand, and his power of managing men on the other, combined with an enormous capability for work, make him an ideal secretary for such a society. This is not the place in which to enumerate all the rare species found during the week, but some must be mentioned. *Sparassia crispata* was sent to the meeting from Surrey; *Agaricus decemcostatus* was found during one of the excursions, an interesting plant, with which we are all familiar, from Fries' figure in *The Lilies*, but which looks something like a cespitose form of *A. nebularis*. *Amanita recutita*, a fungus which Fries recognized as a British species from Berkeley's figure in *The Outlines*, t. 3, f. 8, under the name of *Ag. excolaus*, was found in Clumber Park, as well as *Nolanea chloropollus*, growing in short grass by the roadside. Not far from the last-mentioned, on the perpendicular side of a road-drain, several specimens of *Clitocybe incilis* were gathered, a plant by no means common.

At the evening meeting, Mr. A. CLARKE read a paper on "Photography as applied to Mycology," illustrated by numerous photographs of various species of fungi. This was heard with interest by all present, for all had more or less practical acquaintance with the difficulty of making the pencil depict just what one wants to show. Dr. Plowright gave a short résumé of the new species of Uredines and Ustilagines found during the past year, and exhibited specimens of *Urocystis filipendulae*, Tul., from Mr. Tatum, of Salisbury. Specimens of the two species of *Barley-smut*, *U. Hordei* and *Jensenii* were also shown.

The visit to Birklands on the following day was especially interesting. This is one of the oldest parts of the forest. Beech and Oak are the predominating trees. The Oaks, to which the attention of the mycologists was more particularly directed, were, of course, the oldest and most decayed. Here they were to be seen in hundreds in various stages of hollowness and decay. Twenty years ago one would have passed them by as being merely instances of hollow trees; for why should a tree not become hollow when it is old? Since the masterly researches of Hartig, however, upon the diseases of timber, this is quite changed, and we now ask ourselves what fungus is it that has hollowed these trees? The bulk of the members blessed with youthful eyesight and youthful legs, under the care of a stalwart forester, strode off at the rate of 4 miles an hour, leaving three or four of the less athletic to amuse themselves by turning over fallen logs, dead branches, and decayed leaves, in search of the "microscopic." We did not cover above a quarter of a mile of woodland all day, but the treasures we did find made amends for our deficiency in walking power. Again and again, did we gaze at the stricken Oaks as we wandered under them, examining their fallen limbs; a few bore specimens of *Fistulina hepatica*, but this was not the destructive agent. The manner in which these Oaks grew, or rather how they had ceased to grow, was striking. They had almost without exception well-grown trunks of pretty uniform diameter, up to 30 or 40 feet; then the trunk rapidly diminished in a spindle-like manner, and in almost every case the top of the tree had been broken off by the wind. This destruction of the upper branches was so uniform and so characteristic that it could not fail to attract attention. There were some

hundreds of trees all growing under the same conditions, and exposed to the same winds, &c., none had their large lateral branches blown off, none had been uprooted; something must therefore have predisposed their upper branches to injury. We find as a general rule that the nature of the particular injury a strong wind does to trees, is determined by pre-existing fungoid disease present on them. These grand old Sherwood Oaks, if they were not all hollow, were dead and rotten within; the heart wood being reduced to a mass of delignified tissue. This was shown when some small animal, such as a squirrel or even a mouse, had made its hole through the bark and still living sapwood, as soon as the burrow reached the dead-heart wood, it ran out like sand into a heap beneath the hole, only it was not in fine powder like sand, but in the form of reddish-brown, dry, cuboid fragments. Now, this cuboid fracture depends upon the way in which the mycelium of the fungus originally extended itself, and is beautifully shown in Hartig's *Lehrbuch der Baumkrankheiten*, taf. v. i., figs. 1, 2, and 3. The writer examined tree after tree for parasitic fungi; not a single specimen of *Polyporus dryadeus*, which is so common in Herefordshire, nor of *P. quercinus*, nor of *P. fomentarius*, nor *Agaricus melleus* was seen all day. There was one beautiful *Polyporus*, however, growing in grand luxuriance on great numbers of the trees, and that was *P. sulphureus*. This we know to be one of the worst enemies the Oak-tree has in the fungus kingdom. But we must stop; if we get upon the question of fungus disease, we are apt to grow wearisome to our best friends, and the Editor will remind us that the available space of the *Gardener's Chronicle* is not unlimited.

What became of the walking-party, where they went, and what they found, is not known to the undersigned; but, doubtless, they enjoyed the ramble through the classic glades of the forest of Robin Hood. Amongst those who took part in the meeting, &c., were Miss Rose, of Worcester; Mr. J. Rose, President of the Worcestershire Naturalist's Club; Prof. J. W. Carr, Miss C. Crossland, Sutcliffe; C. T. M. Plowright, J. Needham, Salmon, and H. G. Peacock. *Charles B. Plowright, M.D., King's Lynn, September 18, 1897.*

ONION SHOW AT BANBURY.

THIS Oxfordshire town continues to have its annual display of Onions, owing to Mr. HENRY DEVERILL's prizes that he offers for specimens of pedigree bulbs he has put into commerce. The show is arranged in his shop and premises, which have recently undergone considerable enlargement. As soon as the judging is over the townspeople are admitted, and they crowd the place all the time it is open to them.

The timepiece offered for the six largest and handsomest specimens of either of Deverill's Pedigree Onions was won by Mr. J. BOWERMAN, The Gardens, Hackwood Park, Basingstoke, with six solid, symmetrical, and handsome specimens, weighing 14½ lb.; but they did not reach the record weight of 1895, namely 17 lb. The twelve best specimens of Deverill's Ailsa Craig or Cocoa-nut came also from Mr. BOWERMAN, and they scaled 26 lb. Cocoa-nut was finely shown in this class, but it has no chance against Ailsa Craig, which comes so much larger.

The best twelve specimens of Deverill's Anglo-Spanish, Lord Keeper, Royal Jubilee, and Rousham Park, were the latter, from Mr. W. KEPP, The Gardens, Faringdon House, Faringdon, weighing 3½ lb.; Mr. R. LYE, The Gardens, Sydmonton Court, Newbury, was 2nd, with Anglo-Spanish, weight 1½ lb.

The best twelve of Improved Wroxtton, a long Globe-shaped variety, which has the reputation of being a good keeper, came from Mr. J. E. THOMAS, Oxford; they were admirable illustrations of the type, and weighed 1½ lb. Mr. R. LYE was 2nd with well-formed bulbs of lighter weight.

Deverill's Challenge is a new and distinct Onion, with a pink skin, flat in shape, and quite solid. Mr. LYE had the best twelve, Mr. WAITE taking the 2nd prize.

The largest and handsomest specimen of any one of the Pedigree Onions was one of Ailsa Craig, from Mr. BOWERMAN, who was 1st with a fine, solid example; Mr. KNELLER came next with an Anglo-Spanish.

In the class for the best twelve of any one of the Pedigree Onions, open only to *bond fide* amateurs and cottagers, there were twenty-four entries; the best twelve were Ailsa Craig, from Mr. H. ELLMER, Cuckfield, weighing 18½ lb., the 2nd prize went to Mr. W. WOODCROFT, Nelthrop, Banbury, with the same variety, weighing 14½ lb. Five other prizes were awarded, and in each case were won by Ailsa Craig.

The best six of Deverill's Oxonian Leek came from Mr. R. LYE, superb specimens; Mr. BOWERMAN came 2nd, and Mr. KNELLER 3rd.

The best collection of eight distinct kinds of vegetables comprising Deverill's specialties, came from Mr. R. LYE; he had superb Oxonian Leeks, Aylesbury Prize Red Celery, and Exhibition Scarlet Intermediate Carrot, with others; and Mr. C. J. WAITE came 2nd.

ENGLISH VARIETIES OF POTATOS IN THE U.S.A.—In many of the American horticultural journals notices are found of the trials of English Potatoes, and in the opinion of the writers these varieties are pronounced to be unsuited to the climate of the U.S.A., excepting in seasons whose climatic character approaches that of this country. The only variety

which seems to have exhibited anything like its true character under skilled cultivation is, as we learn from *American Gardening*, Myatt's Ashleaf.

MARKETS.

COVENT GARDEN, SEPTEMBER 23.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms...	5 0-6 0	Marguerites, per 12 bunches...	2 0-4 0
Asters, 12 bunches...	3 0-6 0	Mignonette, per doz. bunches...	2 0-4 0
Bouvardias, per bunch...	0 4-0 6	Myosotis, or Forget-me-Not, 12 bunch	1 6-3 0
Carnations, pr. doz. blooms...	0 9-2 0	Orchids:—	
— per doz. bun.	4 0-6 0	Cattleya, 12 blms	9 0-12 0
Chrysanthemums, p. doz. blooms...	0 6-2 6	Odontoglossum crispum, 12 blms	1 6-0 0
— p. doz. bunches	3 0-6 0	Pelargoniums, scarlet, per 12 bunch	3 0-4 0
Cornflowers, per Dahlias, 12 bunches	3 0-6 0	— per 12 sprays...	0 4-0 6
Eucharis, per dozen	2 0-4 0	Pyrethrums, 12 bn.	1 6-2 6
Gardenias, per doz. blooms...	1 6-2 0	Roses, Tea, per doz.	0 6-1 0
Gladiolus, various, per doz. bunches	6 0-18 0	— yellow (Pearls), per dozen...	1 6-4 0
Lilium Harriet, per doz. blooms...	2 0-4 0	— red, per dozen	0 9-1 0
— Lancifolium, per doz. blooms	1 0-2 0	— pink, per doz.	1 0-2 0
Lily of the Valley, dozen sprays...	1 6-2 6	— Safrano, p. doz.	1 0-2 0
Maidenhair Fern, per 12 bunches...	4 0-8 0	Roses, per dozen bunches...	2 0-6 0
		Stephanotis, dozen sprays...	2 0-2 6
		Tuberose, 12 blms	0 8-0 4
		Violets, 12 bunches	1 6-2 0

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Evergreen shrubs, in variety, doz...	6 0-24 0
Aspidistra, per doz.	12 0-8 0	Ficus elastica each	1 0-7 6
— specimen, each	5 0-15 0	Ferns, small, doz...	1 0-2 0
Asters, various, per doz...	2 6-5 0	— various, doz.	5 0-12 0
Chrysanthemums, p. doz. pots...	5 0-9 0	Foliage plants, doz.	12 0-36 0
— specimen, or large plants, ea.	1 6-2 6	Fuchsia, per doz...	4 0-6 0
Coleus, per doz...	2 0-4 0	Heliotropes, dozen	3 0-4 0
Dracenas, each...	1 0-7 6	Liliums, various, per dozen...	9 0-12 0
— various, p. doz.	12 0-24 0	Marguerites, p. doz.	6 0-9 0
Erica, various, per dozen...	9 0-18 0	Mignonette, p. doz.	4 0-6 0
		Palms, various, ea.	2 0-10 0
		— specimens, ea.	10 6-84 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Dessert, in variety, p. bush.	8 0-10 0	Melons, each...	0 9-1 6
— Culinary, in variety, per bush.	3 6-5 0	Nectarines, selectd fruit, per doz.	6 0-8 0
Blackberries, peck	2 6-8 0	— Medium, p. ds.	3 0-4 0
Damsons, ½-bushel	7 6-8 0	— Seconds, p. doz.	1 6-2 0
Figs, per doz.	1 0-2 0	Nuts, Cobs, per 100 lb...	25 0-27 6
Grapes, Gros Colmar, per lb...	1 6-2 0	— Filberts, per lb.	0 2 —
— Gros Maroc, lb.	1 0-1 6	Oranges, S. Australian, p. case, containing 120 fruit	10 0-12 0
— Alicante, p. lb.	1 0-1 8	Peaches, selected fruits, per doz.	6 0-8 0
— Hamburgs, selected, per lb.	1 0-1 6	— Medium, p. doz.	2 6-3 0
— 2nd quality, per lb...	1 0 —	— Seconds, per dozen...	1 6-2 0
— Muscats, "Cannon Hall," p. lb.	2 0-4 0	Pears, various, per bushel...	4 0-10 0
— Channellands, per lb...	0 6-0 9	— small, bush.	2 0-3 0
— Muscats, selected, per lb...	2 0-2 6	Pine-apples, St. Michael, each...	5 0-8 0
— Muscats, 2nd quality, per lb.	0 9-1 8	Plums, Ordinary, in variety, ½-bush.	6 0-10 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	2 0-2 6	Mushrooms (Indoor) per lb...	1 0 —
Beans, French, per bushel...	3 0-4 0	— (Outdoor), per lb...	0 6-0 8
— Scarlet Runner, per bushel...	1 6-2 6	Salad, small, per doz. punnets...	1 6 —
Beetroot, p. bush.	1 9-2 0	Shallots, per lb...	0 2 —
Cauliflowers, dozen	2 0 —	Sprouts, per ½-bush.	2 0-2 6
Cucumbers, home-grown, selectd, per doz.	2 0-3 0	Tomatoes, selected, per doz. lb...	3 0 —
— 2nds, per dozen	0 9-1 0	— Medium, do.	2 0-2 6
Garlic, per lb...	0 2 —	— Seconds, do.	1 0-1 6
Marrows, per tally	5 6-6 0	— Channel Islands, per lb...	0 2 —

POTATOS.

Arrivals have been rather heavier the last few days; trade firm for choicest samples, but other descriptions have fallen about 5s. Present quotations:—Hebrons and Snowdrops, 70s. to 85s.; Giants and Magnums, 65s. to 75s.; Blacklands, 55s. to 62s. 6d.—John Bath, 82 and 84, Wellington Street Covent Garden, W.C.

SEEDS.

LONDON: Sept. 15.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maize Pond, Borough, London, S.E., write that although it is rather late, sowing orders for Trifolium still drop in; as regards stocks of this article, the platter this season will prove quite bare. For Mustard and Rapeseed, the sale is slow on former terms. Winter Tares meet just now with only a meagre inquiry. There is no change in Rye. Peas, Haricots, and White Runners tend upwards. Bird-seeds are steady in value, but quiet in demand. The Linseed market is flat.

(Markets carried over to p. ix.)



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	Above (+) or below (−) the Mean for the week ending September 18.	ACCUMULATED.			More (+) or less (−) than Mean for the Week.	No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.						
									Below 42°, difference from Mean since January 3, 1897.	
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	1 +	72	0	+ 167	2	1 +	161	27.8	21	30
1	1 +	81	0	+ 21	20	4	148	21.4	31	33
2	1 -	83	0	+ 95	78	3	133	17.8	37	35
3	3 -	78	0	+ 173	124	1	130	17.0	25	39
4	2 -	79	0	+ 122	115	5	130	20.2	26	37
5	2 -	99	0	+ 227	180	2	122	20.4	45	40
6	0 aver	82	0	+ 81	17	5	158	31.0	30	33
7	1 -	86	0	+ 139	92	4	147	24.3	35	36
8	1 -	93	0	+ 231	138	5	153	31.6	50	41
9	0 aver	83	0	+ 12	8	5	169	29.6	27	31
10	2 -	83	0	+ 126	57	6	161	31.8	48	33
* 1	1 -	111	0	+ 323	80	5	162	25.9	53	43

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Graining, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

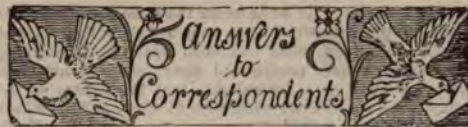
The following summary record of the weather throughout the British Islands for the week ending September 18, is furnished from the Meteorological Office:—

"The weather was fine and dry generally during the earlier half of the week, although a good deal of cloud prevailed at times, and some slight showers occurred in the extreme north and north-east. By Thursday, however, unsettled, rainy conditions had commenced to spread slowly over us from the northward, and by the close of the period the change had extended to all parts of the kingdom.

"The temperature was again below the mean in most districts, but was rather above the normal in 'Scotland, N. and E.,' and just equal to it in 'Scotland, W.' and 'Ireland, N.' The highest of the maxima were recorded on the 13th, and ranged from 75° in 'Scotland, E.,' and from 72° in 'Scotland, N. and W.,' and 'England, S.W.,' to 67° in 'England, E. and N.W.,' and in the 'Channel Islands.' Towards the end of the week the daily maxima were very low. The lowest of the minima were registered either at the commencement or at the end of the period, and ranged from 33° in 'Scotland, W.,' and 34° in 'England, S.W.,' to 40° in 'England, S.,' and to 48° in the 'Channel Islands.'

"The rainfall was less than the mean, excepting in 'Scotland, N.' The deficit was very considerable in most districts, and especially in the west and south-west.

"The bright sunshine exceeded the mean in 'England, N.E. and S.W.,' as well as in 'Ireland, S.' and the 'Channel Islands;' in most other districts there was a deficiency. The percentage of the possible duration ranged from 53 in the 'Channel Islands,' 50 in 'England, S.W.,' and 48 in 'Ireland, S.,' to 25 in 'England, E.,' and 21 in 'Scotland, N.'"



ANTHRACITE COAL: *Anxious.* This is a very enduring kind of fuel. Much dearer than either coke or small coal; it is probably cheaper in the end than either, and a great saving in stoking. To burn it alone requires a strong draught during the early stages of combustion, after which a less strong draught is needed. To obtain the required strong draught, it is sometimes necessary to lengthen the chimney-stalk; and to preserve the fire-bars from destruction, the ash pit should be constructed to hold water. It would be false economy to use coke or ordinary coal with anthracite.

ARALIA SIEBOLDI, ABNORMAL LEAVES: *A. E. C.* The plants suffer from an over-luxuriance of growth, or, rather, of the mesophyll cells of some of the leaves, which stretch themselves out hose-like, forming swellings, and often causing a rupture of the epidermis. According to Sorauer, these appearances are met with in *Dracena*, *Cassia*, *Acacia*, *Aralia*, *Panax*, *Hedera*, *Camellia*, &c. Keep your plants in a lighter and drier house, affording them only a moderate quantity of water at the root, that is, let them get rather dry before applying water, and do not give manures of any sort. The causes of the malady have not been ascertained with certainty.

BOOKS: *T. Trillou.* You should enquire of Mr. Upcott Gill, the Bazaar office, 170, Strand, W.C.

CELERY BLIGHT: *C. W. D.* Celery-leaves seriously affected with a disease, have been forwarded to us, which threatens to destroy the whole Celery crop. At first, the leaves are mottled with roundish or oval, pale brown spots, dotted in the centre with small black points; later on, the spots and leaves are nearly wholly of one colour, densely sprinkled with little elevated black dots, or perithecia. These cells, or perithecia, contain long slender sporules about 30 to 35 millimetres long, and scarcely one millimetre in diameter, with very indistinct guttules or faint septae. Probably this is a variety of *Septoria petroselin*, but with more slender sporules. Of course, this is wholly an endophyte, and exists in the plant before it makes its appearance on the leaves, and hence is most difficult to deal with. Doubtless its spread may be checked by rooting up all hopelessly diseased plants, and picking the leaves off such as are not so bad. One of the copper solutions might be tried as a forlorn hope. *M. C. C.*

CLERODENDRONS: *J. G.* Disease, as shown on the leaves sent, often attacks *Clerodendrons* in the autumn. Keep the plants tolerably dry at the root for two or three months, then cut them back, shake out, and start again.

CORRECTION.—Mr. J. Anderson desires us to correct an error which he made in "Northern Orchid Committee" report (see p. 207). The *Lælia elegans* Cawenbergi, credited to H. Low & Co., Clapton, was the property of William Thomson, Esq., Walton Grange, Stone (gr., Mr. Stevens).

DISEASED CARNATION GRASS: *T. P. & J. F.* The pest is *Uromyces Dianthi*, Nsl., and as it is completely an endophyte—that is, it exists in the plant before signs of it appear on the surface—there is little hope of any application of fungicide solutions. Plants not attacked should be isolated, and syringed with Bordeaux Mixture. All injured plants and leaves should be burnt. *M. C. C.*

GENISTA OTTISUS: *J. G.* The cuttings should be inserted late in June, in pots of sandy peat, surfaced with silver-sand, well watered, and when the foliage has got dry, they should be covered with bell-glasses, and stood in a greenhouse, shading them from bright sunshine. The cuttings should be rooted in six weeks, when they may be potted off singly.

GINSENG: *N. B.* The root of a Chinese plant, *Panax quinquefolium*, said to possess extraordinary medicinal virtues. This plant is also found in North America, and does not possess any such virtues.

INSECT: *Colonel H. Oakden Fisher.* The epidermis is eaten away by the Pear-slugworm, *Selandria atra*. The worm is blackish or bottle-green, of a club-shape, and covered with slime exuding from the skin. Dusting the leaves with quick-lime

several times on successive days will clear them off the trees. Syringing with strong soap-suds or tobacco-water destroys them. The soil underneath the trees should be skimmed, removed, and charred or deeply burned.

INSECTS ON PALM ROOTS: *J. C.* The minute white creatures are apparently the young stage of some spring-tail insect (*Collembola*), but whether they do damage or not is difficult to say. The application of some approved insecticide might destroy them. *R. McL.*

NAME OF FRUIT: *F. F. F.* Apple Worcester Pearmain. Of the Fern, you must send a better specimen.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*J. Banks.* 1, Tarragon (*Artemisia dracunculua*); 2, Summer Savory (*Satureja hortensis*); 3, Wormwood (*Artemisia absinthium*); 4, Horehound (*Marrubium vulgare*); 5, Winter Savory (*Satureja montana*); 6, Sweet Basil (*Ocimum basilicum*); 7, Pot Marjoram (*Marjorana hortensis*).—*W. D. H.* 1, *Impatiens parviflora*; 2, *Mentha hirsuta*.—*Conifera.* 1, *Juniperus virginiana* var. *Schottii*; 2, *Quercus illex*; 3, *Juniperus virginiana*; 4, *Cryptomeria japonica*; 5, *Juniperus recurva*; 6, *Caprea macrocarpa*.—*F. Carter.* 1, no flowers sent; 2, *Thia orientalis*; 3, *Cryptomeria japonica*; 4, *Caprea pisifera*; 5, *Sequoia sempervirens*; 6, *Fitzroya taxagónica*.—*Z. Z.* 1, *Spiraea*: no flowers sent; 2, *S. canescens*; 3, *S. japonica* var.; 4, *Veronica* (garden hybrid); 5, *Viburnum*; 6, *Eleagnus*. Specimens very poor, scrappy and imperfect.—*J. Backhouse & Son.* *Podocarpus alpina*, and *Araucaria sericea* (*Physianthus albens*).—*J. G.* 1, *Linaria bipartita*; 2, *Retinospora pisifera aurea*; 3, *Juniperus excelsa*; 4, *Cyrtodella fulgida*; 5, *Aster besenarabicus*.—*H. W.* 1, *Abutilon Darwini* var. *sepiatum*; 2, *Abutilon striatum*; 3, *Eupatorium album*; 4, *Sempervivum arachnoideum*; 5, *Pachyphytum bracteatum*; 6, *Pachyphytum intermedium*; 7, *Haworthia margaritifera*; 8, *Crataegus Azarolus*; 9, *Asclepias curassavica*.—*Stanhopea.* You must send a better specimen, and when in flower if possible.—*Caldwell & Sons.* *Atriplex hortensis* var. *atrosanguinea*.—*G. P.* The purple-leaved plant is *Atriplex hortensis* var. *sanguinea*, the other is *Periploca græca*. The seeding of this plant is rare in this country.

PEAR: *A. R. S.* We must see the insect before we can name it; and none was sent. Kindly send specimens.

SOOT: *A. M.* Let a peck of fresh soot be put into a canvas bag, soak in 20 gallons of water for two or three days, and then use for the Cabbages, &c.

TOMATOS: *A. M.* The fruits crack owing to excess of moisture at the root.

WOODLICE IN CUCUMBER-HOUSE: *C. H. W.* Try the effect of pouring boiling water into all crevices, and dashing it under the beds and wherever there is a hiding-place for the insects; doing this at night when they are out of their haunts feeding. Slates laid on the floor about 1-inch above it form capital traps, and large numbers can be caught by this simple means. Carbolic acid might be tried with good effect.

COMMUNICATIONS RECEIVED.—Subscriber.—*H. C. & Sons.*—*C. Roskill*.—*C. B.*—*St. Andrews*.—*Roberts*.—*W.*—*James B. T. B.*—*W. H. H.*—*J. Florence* (you should send particulars of treatment).—*W. C.*—*T. Singleton*.—*P. G. G.*—*J. R. H.*—*W. T. J.*—*W. T.*—*N. E. B.*—*T. J. F.*—*J. Carter & Co.*—*J. Laing & Sons*.—*A. J. L.*—*F. J. M.*—*J. R. W. T.*—*F. Sander & Co.*—*J. B. Davy*.—*W. G.*—*W. G. S.*—*Elliot*.—*W. L. C.*—*S. H. J. H.*—*A. D.*—*J. O'B.*—*J. E.*—*C. de B.*—*D. T. F.*—*H. T. M.*

PHOTOGRAPHS RECEIVED.—*Furcraea* from Natal, through Mr. Medley Wood.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardener's Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED,

and that it continues to increase weekly. Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, AND ALL CLASSES OF GARDENERS AND GARDEN-LOVERS at home, that it has a specially large FOREIGN AND COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 2, 1897.

THE HORTICULTURAL TRADE DURING THE PAST SIXTY YEARS.

IN looking back upon the horticultural events associated with the long reign of the Queen, some mention of the changes which have occurred in connection with the London and provincial seed and nursery trades during that period may not be without interest. As far as can be learned—for no attempt appears to have been made to compile anything like a reliable trade list until the late Mr. John Edwards started his *National Garden Almanac* in 1833—the leading wholesale seed houses in 1837, or within a year or two of that date, were J. G. Waite, Hatton Garden; J. Nutting, 46, Cheapside; Warner & Warner, 28, Cornhill; Noble & Co., 162, Fleet Street; and Flanagan & Son, Mansion House Street, though probably the latter was a retail rather than a wholesale dealer in seeds. I think it may be safely assumed that the firms of Minier, in the Strand; Beck & Co., Adelphi; and Wrench, London Bridge, were also in existence as wholesale seed dealers in 1837; for although their names may not have appeared in contemporary advertising records, it being a point of etiquette with some of the old firms not to advertise, and they were content to be represented on journey by the principals or their travellers; yet their existence is pretty certain.

In some of the gardening publications which appeared in 1843 could have been seen a notification by William Hurst and William George McMullen, "for many years past engaged in the house of Warner & Warner, 28, Cornhill," to the effect that it was their intention to open a new seed establishment at 6, Leadenhall Street. This announcement covered considerable space, as a catalogue of flower and vegetable seeds formed a good part of it; and from it could be learned that the Walcheren Broccoli had only recently been offered, and that Myatt's Victoria Rhubarb and British Queen Strawberry, also raised by Myatt, were new also, the latter being quoted at 10s. 6d. per hundred.

By 1853 changes had occurred, for Warner & Warner had disappeared; the firm of J. Nutting had become Nutting & Son, and was still in Cheapside, and the name of Lockhart, 84, Cheapside, also appears; J. G. Waite had gone to Holborn, and H. Clarke probably from the Borough to King Street, Covent Garden; and the firm of Noble & Co., perhaps the oldest of all, had become Noble, Cooper, & Bolton.

Of the foregoing houses, Nutting & Son

carried their business to Barbican, and subsequently to Southwark Street; it is one of the best known and best respected of the London wholesale seed-houses. Hurst & McMullen subsequently became Hurst & Son, and some years ago changed their head-quarters to 152, Houndsditch, where they carry on an enormous business, the present head of the firm being Mr. N. Sherwood, so well known for his great liberality to our gardening charities. Beck & Co. became Field & Child, and later as Beck, Henderson & Child, and at the time of the commencement of the Thames Embankment carried their business from the Adelphi to Upper Thames Street, and eventually became united with the firm of Waite & Co., who some years since changed from Holborn to Southwark Street. The firm of Minier, Nash & Nash, so long carried on at 60, Strand, was eventually absorbed by Waite & Co. Noble & Co., subsequently Noble, Cooper & Bolton, eventually R. Cooper, of Southwark Street, and now Cooper, Taber & Co., ultimately absorbed the firm of Waite & Co., and they are still in business in Southwark Street.

In 1853 Charlwood & Cummins, a business probably established before 1837, were at Tavistock Row, Covent Garden, where the firm remained for many years, and which at one time enjoyed a considerable reputation for tree and choice seeds, subsequently becoming Howcroft & Watkins, and who still carry on business in Hart Street, Covent Garden. In a trade list dated 1854, I find for the first time Batt, Rutley & Silverlock at 412, Strand, though the firm may have been founded some years previously, and it is now Rutley & Silverlock, of Savoy Street, Strand.

In 1853, the firm of G. Gibbs & Co. was in Down Street, Piccadilly, and that of T. Gibbs & Co. in Half Moon Street, Piccadilly, and both had doubtless existed or some years; but one firm only exists now—that of T. Gibbs & Co., Down Street, but it is doubtful if anyone of the name of Gibbs is now associated with it.

James Carter o doubt established himself in business in Holborn antecedent to the Queen's accession, as I have one of his catalogues bearing date 1842, a publication in remarkable contrast to that issued by Messrs. Carter & Co. in the present day. On the death of James Carter, Messrs. Ainsworth, Beale, & White—I believe, three of the assistants in the business—became partners, and subsequently it was in the hands of Mr. Beale alone. Eventually he took into partnership Mr. W. H. Dunnett, an extensive seed-grower at Dedham and St. Oystin, in Essex; the wholesale branch was added to the retail business, and it has now grown into a very large one. In 1858, Hooper & Co. were in the centre-row Covent Garden, and they subsequently went into the wholesale trade; but the name appears to have now become almost, or quite, extinct. The same may be said of Smithers & Crighton, who had a wholesale place of business in Bunhill Row, twenty years or so ago.

I think it must have been subsequent to the Queen's accession that Messrs. P. Lawson & Sons of Edinburgh, established themselves in Great George Street, Westminster, opening a London dépôt; they subsequently went to King Street, Cheapside, and eventually to Southwark Street; and it was while in occupation there that the London branch was given up. Messrs. Stuart & Co., now of Henrietta Street, Covent Garden, is a firm dating back about forty years or so. Mr. A. Legerton has been in business at Aldgate for many years. The youngest of the London wholesale seed firms is that of Watkins & Simpson, Exeter Street, Strand. Mr. Watkins began his business career with Messrs. Charlwood & Cummins, in Covent Garden, and subsequently had charge of the flower-seed department of Messrs. Hurst & Son, until he started in business as above, and is now at the head of a successful commercial undertaking. So much, then, for the wholesale trade firms so far as information

is available. I confess that the earlier information at my disposal is somewhat scanty, and is no doubt open to correction; much of it, however, is the outcome of personal knowledge, as I became connected with the London wholesale seed trade forty years ago.

In reference to the London retail seed and nursery businesses, I find that in 1844, W. Cattleugh was at Hans Place, Chelsea, also in the Old Brompton Road, and was then sending out the new *Pelargoniums* raised by Foster and others. It may, I think, be assumed that Gray, Adams & Hogg were in business at that time in South Kensington, on the site of the present Exhibition Road, but the firm had disappeared before 1851. Cutbush was at Highgate, Cuthbert at Southgate; J. Cuthill was in business at Denmark Hill, Camberwell, in 1837, and in 1842 he sent out his Black Spine Cucumber, which was a great favourite with gardeners for many years; Chandler & Sons were at Vauxhall when the Queen began her reign; Dennis in the King's Road, Chelsea, raising and sending out, among other things, *Pelargoniums* and *Calceolarias*; Little was carrying on a florist's business in the same road; and the premises after remaining unused for a number of years have been quite recently acquired by Messrs. Carter, Paterson & Co., carriers, &c. N. Gaines, a famous raiser and cultivator of *Pelargoniums*, was at Battersea; Dickson, famous for *Auriculas* and other florists' flowers, at Acre Lane, Brixton; E. Denyer was at the Loughborough Nursery; and J. & J. Fraser were in the Lea-bridge Road: this business was established many years ago at Leyton by Findlay Fraser, it was then carried to the Lea-bridge Road, and is now located at South Woodford as Fraser & Son. The Brothers Fraser were famous cultivators and exhibitors of stove and greenhouse plants, *Pelargoniums*, &c., forty years ago; Glendinning at this time was at Chiswick, but later he removed to the neighbourhood of Percy Cross, Fulham. H. Goldham was at Islington; H. Groom at Clapham—both famous cultivators of Tulips; the Hendersons were in the Wellington Road and Pineapple Place, St. John's Wood; the Waterers were building up their great reputations at Bagshot and Knaphill; Knight & Perry were at the Exotic Nursery, King's Road, Chelsea, as the business did not pass into the hands of Mr. J. Veitch until 1853. J. & C. Lee, originally Lee & Kennedy, were at the Vineyard, Hammersmith, now C. Lee & Son, though most of the original site of the nursery is covered by buildings; Loddiges & Sons at Church Street, Hackney; and Low & Sons at Clapton, from whence they sent out, in 1843, *Tropaeolum polyphyllum* at 42s. per plant. Further, Protheroe & Morris were at Leytonstone; Rolleston at Tooting; Weeks & Co. at Chelsea; and Whitley & Osborn at Fulham. This firm was originally established by Messrs. Whitley, Braham, & Milne; and Mr. Osborn, who came from Scotland as a clerk to the firm, ultimately became a partner with Mr. Whitley, and subsequently the head of the firm of Osborn & Sons. In 1844, there was the firm of F. & A. Smith at Hackney; but whether they subsequently removed to Dulwich, and was known as F. & A. Smith there, I cannot say. I think that Geo. Smith, Tollington Nursery, Islington, at one time a famous *Verbena*-grower, must have embarked in business a little later than the date of the accession of the Queen. J. Kernan, Russell Street, Covent Garden, was certainly there in 1842.

Going beyond the more immediate district of London, it may be remarked that Ronalds was at Brentford in 1837, Mountjoy & Son at Ealing, and the Brothers Hayes at Edmonton, or, at least, very soon after this time.

In 1837, T. Rivers, Jun., was at Sawbridgeworth, and in 1842 advertised *A Short Treatise on the Root Pruning of Fruit Trees*. J. Wood, subsequently Wood & Ingram, of Huntingdon, was sending out *Picotees* in 1837, and a new scarlet-flowered *Phlox Drummondii* in 1842. E. P. Francis was at Hertford, and in 1843 he sent out Snow's Winter White Broccoli. Youell & Co. were at Great Yarmouth, and in the same year they distributed the *Festolf Raspberry*. George Lightbody was also distributing *Auriculas* from Falkirk, and Rev. J. Tyso the *Ranunculus* from Wallingford. The Brothers Brown sent out

Dahlias from Slough; Geo. Wheeler from Warminster, Pamplin & Sons from Walthamstow, and Willmer from Sunbury. Ed. Spary, who subsequently became a nurseryman at Brighton, was in 1835 gardener at Denford House, Hungerford, and a successful cultivator and exhibitor of Dahlias; while Widnall was a contemporary raiser of considerable repute. At Reading, John Sutton, the founder of the firm, had commenced business as a dealer in agricultural seeds; sixty years ago Mr. Martin Hope Sutton, now in his eighty-second year, reorganised his father's business, and added thereto the vegetable and flower-seed branches, and the concern has now grown to be of gigantic proportions. E. Cooling, at Derby; Sharp, of Wisbech; The Dicksons of Chester; Veitch & Son, and Lucombe, Pince & Co., of Exeter; W. Chater, of Saffron Walden; J. C. Wheeler & Son, of Gloucester; J. Cranston, of Hereford; W. Bridgewater Page, an accomplished botanist and landscape gardener; W. Rogers & Oakley, of Southampton; Lane, of Berkhamsted; and Adam Paul, of Cheshunt. Adam Paul was a gardener at Enfield, and went into business as a nurseryman at Church Gate, Cheshunt, in 1807 or 1808, at a place which was originally vineries or seed grounds; he died about 1843. At that time the Cheshunt Nurseries were widely known for their Hollyhocks as well as Roses. Adam Paul was succeeded by his sons George and William, and in 1860 a separation took place, George retaining the home nursery and William established himself at Waltham Cross hard by. There were also W. Mesters, of Canterbury; Skirving, of Liverpool; R. S. Yates, of Manchester; J. Warner & Thos. Harrison, of Leicester; Pennell, of Lincoln; Sharpe, of Sleaford; Saunders, of Abergavenny; Ewing, of Norwich; John Perkins, of Northampton; Pearson, of Chilwell; T. Perry, of Banbury; E. Tilley, Bath; Maule, Sealey, & Garraway, of Bristol; Ivory, of Dorking; Jackson, of Kingston; H. Pope, of Birmingham; Backhouse, of York; and not a few of the Scotch and Irish firms were doubtless established at the commencement of the Victorian Era.

Permit me to say that I submit the foregoing information, which has been compiled with considerable care, not without some degree of diffidence, because dates in some cases cannot be accurately verified. I hope it will not be altogether unacceptable, as marking interesting trade events during the past sixty years. *Richard Dean, Faling, W.*

NEW OR NOTEWORTHY PLANTS.

MEGACARYON ORIENTALE, Boissier.*

OUR illustration (fig. 67) shows a specimen (much reduced) of a remarkable Boraginaceous plant which has recently flowered in the garden of W. B. Boyd, Esq., of Faldonside, Melrose. It was originally described by Linnæus as *Echium orientale*, and was called by Boissier at one time *Oncosma megalospermum*, but ultimately called by him by the name here adopted. It is a native of Turkish-Armenia, and is a tall, coarsely hairy plant, closely allied to *Echium*, differing from it chiefly in the smooth, ovoid, not tubercled carpels. The leaves are oblong lanceolate, narrowed at both ends, and hoary. The numerous flowers (see fig. 68) are borne in a terminal, loosely-branched pyramidal cyme. The corolla is tubular, with an irregularly five-lobed limb, the two upper petals pink, each with two longitudinal purplish streaks.

Mr. Boyd, in a note, says:—"All that I can say about the plant is, that six years ago I received the young seedling plant from Mr. Thompson, of Ipswich, and that it has been growing since then in a rocky border in rather heavy loam, which may have retarded its flowering for so many years. On carefully measuring the plant, I find that it is exactly 4 feet 3 inches high."

VANDA AMENA ×.

Another new natural hybrid Vanda has to be recorded (fig. 69, p. 259). It was imported by Messrs.

* *Megacaryon orientale* (Linn. sub *Echium*), Boissier, *Flora orientalis*, vol. iv. (1879), p. 204.

Linden of Brussels, along with *V. Roxburghi* and *V. corulea*, between which two species there is little doubt it is a natural hybrid, both the habit of the plant, and the size and colour of the flowers, being evidently intermediate between the two species named. The sepals and petals are glossy on the surface, and of a peculiar bluish-grey, marked with many blue spots. The side lobes of the labellum are white spotted with blue; the front lobe violet-blue. It is a very pleasing and distinct variety, and was accorded an Award of Merit by the Orchid Committee of the Royal Horticultural Society, when it was shown by Messrs. Linden on Sept. 21. *J. O'B.*



FIG. 67.—MEGACARYON ORIENTALE; FLOWERS ROSEY-LILAC, STREAKED WITH RED.

ORCHID NOTES AND GLEANINGS.

A SINGULAR MILTONIA.

A FLOWER of the beautiful, vinous-purple-tinted *Miltonia spectabilis* Moreliana var. *illustris*, sent by Mr. W. H. Young, Orchid-grower to Sir Frederick Wigan, Clare Lawn, East Sheen, Richmond, and which is apparently normal in every other respect, presents the curious feature of having three pairs of pollinia, each pair under its own anther-cap, the whole being symmetrically arranged in triangular form at the apex of the column, the creamy-white anther-caps within the purple wings of the column giving rather an additional beauty to the flower. The upper set are in the usual place, the pollinia attached by caudicles in the normal way. The two extra sets are arranged below it, one on each side. The anther-caps of the extra sets are attached to the column by the outer edge only, and on removing them, each discloses a pair of pollinia, which are almost free, and not attached by caudicles. It is a very singular departure from the normal form.

ORCHID PORTRAITS.

- BRASSAVOLA GRANDIFLORA, *Dict. Icon. des Orch.*, 1897.
 CATTLEYA INTERMEDIA, VAR. PUNCTATA, *Dict. Icon. des Orch.*, August, 1897.
 CATTLEYA MOSSIE, VAR. REINECKIANA, O'Brien, *des Orch.*, August, 1897.
 CYPRIPIEDUM LAWRENCEANUM VAR. TRIEVANUM, part LXXVIII.
 DENDROBIUM SCAYISSIMUM, *Lindenia*, part LXXVIII.
 EPIDENDRUM COSTARICENSE, *Dict. Icon. des Orch.*, 1897.
 LELIO-CATTLEYA ELEGANS, *Dict. Icon. des Orch.*, 1897.
 LELIA DIGBYANA, Benth., *Dict. Icon. des Orch.*, 1897.
 LELIA LATONA, *Dict. Icon. des Orch.*, August, 1897.
 MASDEVALLIA RACEMOSA, *Dict. Icon. des Orch.*, August, 1897.
 MILTONIA VEXILLARIA VAR. VITTATA, *Lindenia*, part LXXVIII.
 ODONTOGLOSSUM CIRROSUM, *Dict. Icon. des Orch.*, 1897.
 ONCIDIUM CRISPUM, *Dict. Icon. des Orch.*, August, 1897.
 ONCIDIUM TIGRINUM, *Dict. Icon. des Orch.*, August, 1897.
 SCHOMBURGKIA TIBICINIS, *Lindenia*, part LXXVIII.
 SELESPIEDUM CLEOLA, *Dict. Icon. des Orch.*, August, 1897.
 SOBRIA LUDOXANTHA, *Revue de l'Horticulture étrangère* for September 1, 1897.

METHODS OF PROPAGATION.

(Continued from p. 178.)

CUTTINGS.—This mode of increasing plants, or trees is only resorted to in nurseries, in a field in the open ground. Hedge or shelter-trees, required in quantity, are so raised as well as some of fruit-tree stocks, as the Quince, Paradise, and knot Apples; while every gardener and grower knows that all kinds of Willow and Poplar are easily propagated from cuttings. Pollards are by taking straight branches of the various trees, cutting their bases to a point with an axe. They are then dropped into holes dibbled by the margins of rivers, brooks, or where they seldom fail to root freely. Almost equal facility can be raised most of the Poplars, usually cuttings of the ordinary size are taken, these, as they are so rapid in growth that they make good plants. The cuttings should be about 9 inches long, finished square at the bottom, the top being cut diagonally, and in planting 6 inches of the cutting should be dibbled in the soil, and firmly fixed by treading and affording.

In nurseries, most of the hardy-climbing plants are kept in pots plunged in the open ground, of silt, tan, coal-ashes, or other light material, that they are ready for sale, and can be transplanted at any season.

These so-called climbers, for some are only trained to climb by being nailed or tied to walls or other structures, are, as a rule, propagated by cuttings; it will well to take these first.

Akebia quinata is a rapid and graceful climber, with deeply divided ternate or quinate leaves, producing abundance of dark plum-coloured, sweet-scented flowers in the spring. Cuttings of the mature root readily in the early autumn under a bell-glass, the open; or an old plant may be taken into the houses in early spring, and the young cuttings taken off as they push, the cuttings being inserted in well-drained light soil in pans or pots, and covered with a bell-glass. Kept close and warm, the root in about a month, and may then be afforded as soon as they are hardened off, be planted into 60's. The various kinds of Ampelopsis thus increased as has before been demonstrated the head of single-eye propagation.

The Berberis tribe includes no true climber, but such species as *B. Thunbergi*, *B. stenocephala*, *B. nepalense*, and even *B. Darwini*, may be trained to cover fences or trellises with evergreen foliage, and the last-named species will generally flower or thrice a year. All may be raised in the open from cuttings inserted in prepared beds, and covered with hand-lights, though the process is often tedious. *Buddleia globosa* is increased by cutting young wood, taken with a heel of the wood of the previous season, and inserted in a north-facing position, while *Buddleia Lindleyana*, which differs so much from it in its inflorescence, may be increased in the same manner by simply taking off the young growth with a heel, inserting them in sandy loam, covering with a bell-glass, shading from direct sunshine, and protecting from frost.

Among *Ceanothus* we have some short-jointed, small-foliaged kinds, which are best increased by cuttings in gentle bottom-heat. Prepare the propagating-pan by covering the bottom with clean potsherds, on these put a layer of peat-fibre, and finish with a layer of prepared soil having a good quantity of peat and sand in its composition. Insert the cuttings firmly in the soil, water copiously, cover with a clean bell-glass, and plunge to the rim in any position where it will have the advantage of gentle bottom-heat, and the cuttings will be rooted and ready to pot off in the autumn if the process be started in early spring, which is the best period. *Ceanothus rigidus*, *C. papillosus*, *C. thyrsiflorus*, and *C. verrucosus* are best propagated in this manner; the stronger-growing varieties, of which *C. asureus* is the type, are best layered, so greatly do they vary and degenerate when raised from seed. *Corchorus japonicus* and its varieties can be increased with facility if cuttings be taken of the partially-matured wood, inserted in a prepared composition in the open border, and covered close with a hand-light. The white single-flowered kind, *Rhodotypus* of continental nurseries, and the extremely pretty Japanese form, *C. japonicus variegatus*, with its abundant, single primrose coloured flowers and elegant silver

grand glossy foliage, while the young shoots are of a distinctly reddish-bronzy tint, adding much to its beauty as a wall or fence plant.

Cydonia (*Pyrus*) *japonica* has now many fine and distinct varieties other than the well-known but mis-called "*japonica*." Colours ranging from pure white in "*nivalis*," through orange, or even yellow shades, to the deep blood-red of *Lucien Simons'* new variety, "*Simoni*;" while handsome fruits are yielded by "*Maulei*" and *Maulei superba*; and from America we have a variety named *Columbia*, with finely coloured fruits, 2 to 3 inches in diameter, which may be used as the common Quince as in tart, or to make a preserve. All these will strike, if cuttings of the mature wood be taken with a heel. *Experience*.

(To be continued.)

FRUIT REGISTER.

FRUITS IN THE UNITED STATES.

THE following notes are taken from reports collected and published by the Agricultural Department at Washington, and their correctness is therefore to be relied upon:—

As to *Peaches* we learn that, with few exceptions,



FIG. (8).—FLOWERS OF MEGACARYON ORIENTALE (NATURAL SIZE).
(SEE P. 226.)

variegated foliage, are worthy a place in any good garden.

The *Cotoneasters*, such as *C. thymifolia*, &c., may be increased by simply planting out a large bushy plant in the open, and pegging the branches down to the soil, and then partially covering them with a prepared, light compost, made firm, when every shoot will throw out adventitious roots, and eventually make a plant; or the growing points may be cut off with a heel, inserted in propagating-pans or pots, and covered with a bell-glass; and if these be plunged on a warm tan-bed, it will facilitate and encourage rooting.

Crataegus Pyracantha, or the Fire Thorn, an indispensable wall or border-shrub, should be layered or raised from seed, as I have before noted; but the very vigorous and otherwise improved variety, *C. p. Lelandi*, may be easily propagated from cuttings of yearling wood inserted in sandy soil in the open, and covered close with a hand-light, or the cutting-pan may be plunged in a tan-pit and covered with a bell-glass. I have previously remarked that by far the most free-fruited habit is secured by grafting on the white-thorn, but it is as well to have also a stock of it on its own roots. Another allied shrub, the *Photinia*, may be propagated by striking the young wood taken with a heel of mature wood, or it may, with advantage, be grafted on the common Quince-stock. It ranks next to the *Magnolias* for its

the crop is not a good one—in New York, rather poor; in New Jersey, not very good; in Pennsylvania, only moderate; in Delaware, less than 10 per cent. of an average crop; in Maryland, a small crop; in Georgia, less than half a crop; in Kentucky, below last year; in Ohio, almost an entire failure; in Arkansas, the crop is on the whole good; California, fair; Washington, never better; Oregon, promises better than last season.

Apples are reported below average except in the far west, and on the Pacific coast. From all the North Atlantic States the reports are more or less unfavourable. In Ohio the fruit has dropped off badly, and the indications are that the present condition of 46 per cent. will prove to be too high rather than too low.

Grapes in New York are reported as in rather poor condition; New Jersey as fairly good; Pennsylvania, only moderate; Delaware, generally fine; Maryland, healthy, and in good condition; Virginia, generally abundant, and thus far free from rot; Georgia, promising well; Kentucky, good condition; Ohio, suffered less than other fruits, but not indicating an unusually large yield; Indiana, injured by late frosts; Missouri, merely a normal crop, of good quality; Kansas, very satisfactory; Nebraska, over average as to yield and quality; Washington, never better; Oregon, more promising than last year; and California, promises to be exceedingly good.

FRUIT-FARM IN KANSAS.

A correspondent supplies us with the following interesting intelligence:—The "*Apple King of the World*," is the high-sounding title given to Judge Wellhouse: his orchard consists of 1630 acres, containing 100,000 Apple trees. In thirteen years he has picked over 400,000 bushels of Apples, and whenever he has spare money he adds to his orchard, and sets out more Apple-trees; growing these is his passion. Said he, "I take more delight in planting Apple-trees, and seeing them grow, than in anything else in the world." Chief precedences as to favourite varieties is given to Ben Davis, of which he has 630 acres; Missouri Pippin, 360 acres; Jonathan, 300 acres; and Pano, 100 acres. Thirty of his years have been spent in Apple culture. May he spend as many more.

TASMANIA.

We are indebted to the Agent-general for the following brief note concerning the Apple crop of the past season:—Total number of cases sent to market, 123,575 (per P. and O. Co., 63,263; per Orient Co., 55,312 cases). The season lasted from the beginning of April till the early days of June. The following are the averages of the prices obtained for the varieties mentioned:—New York Pippins, per case, 4s. 3d. to 21s.; Alfristons, 4s. 9d. to 16s. 6d.; Ribston Pippins, 4s. 9d. to 16s. 6d.; Prince Alfreds, 5s. 9d. to 21s.; Scarlet Pearmaines, 3s. 9d. to 16s.; Sturmer Pippins, 5s. 3d. to 13s.; French Crabs, 6s. to 10s. 6d.; various other kinds, from 4s. 6d. to 16s.

It is satisfactory to get an authoritative statement as to prices; it shows that a careful selection of sorts, care in packing and handling, tell on the market here.

THE WHEAT CROP OF 1897.

The rainfall in September, 1896, was very much above the average in all the chief Wheat-growing districts in England. At Rothamsted it exceeded 8 inches, being nearly 5½ inches over the average, and the temperature was above the average. There was a good deal of rain in the first three weeks of October, but the latter part of the month was fairly dry; and this dry weather continued all through November, thus enabling farmers to sow a large area of Wheat. Both October and November were very cold months. December was a wet and rather cold month. There was also a good deal of rain in the first part of January, the latter part, however, being much drier; the first half of the month was of average temperature, the last half being very cold, the thermometer during the third week showing 6° to 8° below the average. The first week in February was very wet and cold, the rainfall during the rest of the month being considerably below the average, and the temperature much above, especially during the last week, which showed 8° or 9° over the average. Very little corn was sown during the month of March, owing to constant wet weather; the month was also warm, especially during the last week, when the temperature rose to 8° or 9° over the average. The abundant hay crop was greatly assisted by the complete saturation of the soil by the March rainfall. April was both cold and dry, and this character of the weather continued throughout the month of May. A great deal of rain fell during the first three weeks of June, and the temperature being higher than average, the growth of all crops at that period was very rapid. The last week in June and the first week in July were very warm, the temperature rising 3° or 4° over the average; this was followed by a cold wave, bringing the temperature several degrees below that of the previous two weeks. The remainder of the month, and the first fortnight in August, were very favourable for harvest operations; after that a good deal of rain fell in different parts of the country, and corn which had not been carried suffered much injury. With the exception of the serious fall in temperature which occurred in July at a very critical period in the growth of the crop, there is nothing in the general character of the climate which would lead one to suppose that the crop would be below an average yield, or that so much inferior or offal

corn would exist. This cold weather continued for a fortnight in England, E., while the hot weather returned in England, S. and the Midland Counties, at the end of one week. The only remarkable feature in the climate of the harvest-year ending August 31, 1897, which has not occurred to the same extent before during our experiments, was the great rainfall in September, 1896. Rain fell on twenty-three days out of the thirty, and gave a total of 8 inches for the month, which was nearly $5\frac{1}{2}$ inches over the average of forty years.

Farmers are very well acquainted with the great value of nitrate of soda as a manure for our Wheat and other corn crops, and they also know that it is the nitric acid which constitutes its chief value; but they do not know quite so well that it is the nitric acid which is formed in our soils year by year which is one of the most important foods for our Wheat crop. It is generally found in our soils as nitrate of lime, and being exceedingly soluble in water, it rises and falls with the soil water as the weather is wet or dry, being washed out of the soil when drainage takes place. For the last nineteen years we have measured the amount of nitric acid per acre in the rain-water which has passed through the soil of one of our fields to the depth of 20 inches, the soil not being disturbed in any way, and kept free from vegetation. The average amount of nitric acid, calculated as nitrate of soda, passing through 20 inches of soil in September amounted to $19\frac{1}{2}$ lb. per acre; whilst in September, 1896, when so much rain fell, it amounted to $130\frac{1}{2}$ lb. It is quite evident, therefore, that our Wheat was sown in a soil which had been deprived of one of its most important foods to a very serious extent. Whether the roots of the Wheat plant remained near the surface instead of passing into the subsoil; whether the crop was injured, or if injured, to what extent, by this loss of nitric acid, we have no experience to guide us. Although the rainfall in the chief Wheat-growing districts of England during the month of September was very much over the average, still it was very much less than the rainfall at Rothamsted; and if the Wheat suffered injury from this cause, it would suffer more here than in other districts. Our Wheat crop is therefore not so reliable as it would otherwise be as indicating the yield of the country; still, I give the figures for what they are worth:—

Years.	Unmanured, Plot 8.	Farmyard Manure, Plot 2.	Artificial Manures.				Mean of Plots 8, 2, and 7, 8, 9 (or 10).
	Plot 8.	Plot 2.	Plot 7.	Plot 8.	Plot 9 (or 10)	Mean.	
BUSHELS OF DRESSED GRAIN, PER ACRE.							
Present year, 1897	8 $\frac{1}{2}$	37 $\frac{1}{2}$	28 $\frac{1}{2}$	37	27 $\frac{1}{2}$	31	25 $\frac{1}{2}$ *
Averages:—							
10 years, 1887-96	1 $\frac{1}{2}$	40 $\frac{1}{2}$	34 $\frac{1}{2}$	37 $\frac{1}{2}$	35	35 $\frac{1}{2}$	29 $\frac{1}{2}$ †
35 years, 1857-96	13	33 $\frac{1}{2}$	32 $\frac{1}{2}$	36 $\frac{1}{2}$	36 $\frac{1}{2}$	35 $\frac{1}{2}$	27 $\frac{1}{2}$ ‡
45 years, 1852-96	13	35 $\frac{1}{2}$	34 $\frac{1}{2}$	36 $\frac{1}{2}$	36 $\frac{1}{2}$	35 $\frac{1}{2}$	27 $\frac{1}{2}$ §
WEIGHT PER BUSHEL OF DRESSED GRAIN IN POUNDS.							
Present year, 1897	60 $\frac{1}{2}$	61 $\frac{1}{2}$	61 $\frac{1}{2}$	61 $\frac{1}{2}$	60 $\frac{1}{2}$	61 $\frac{1}{2}$	61
Averages:—							
10 years, 1887-96	60 $\frac{1}{2}$	61 $\frac{1}{2}$	61 $\frac{1}{2}$	61 $\frac{1}{2}$	60 $\frac{1}{2}$	61 $\frac{1}{2}$	60 $\frac{1}{2}$
35 years, 1857-96	58 $\frac{1}{2}$	60 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$
45 years, 1852-96	58 $\frac{1}{2}$	60 $\frac{1}{2}$	60 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$	59 $\frac{1}{2}$
TOTAL STRAW, CHAFF, &c., PER ACRE, IN CWTs.							
Present year, 1897	7 $\frac{1}{2}$	34 $\frac{1}{2}$	28 $\frac{1}{2}$	30	32 $\frac{1}{2}$	33 $\frac{1}{2}$	25 $\frac{1}{2}$
Averages:—							
10 years, 1887-96	8 $\frac{1}{2}$	37 $\frac{1}{2}$	31 $\frac{1}{2}$	39	26 $\frac{1}{2}$	35 $\frac{1}{2}$	27 $\frac{1}{2}$
35 years, 1857-96	11 $\frac{1}{2}$	31 $\frac{1}{2}$	33 $\frac{1}{2}$	40 $\frac{1}{2}$	41 $\frac{1}{2}$	38 $\frac{1}{2}$	27 $\frac{1}{2}$
45 years, 1852-96	10 $\frac{1}{2}$	32 $\frac{1}{2}$	33	40 $\frac{1}{2}$	40 $\frac{1}{2}$	38	27 $\frac{1}{2}$

* Equal to 26 $\frac{1}{2}$ bushels at 60 lb. per bushel.

† Equal to 30 bushels at 60 lb. per bushel.

‡ Equal to 27 bushels at 60 lb. per bushel.

§ Equal to 27 $\frac{1}{2}$ bushels at 60 lb. per bushel.

A reduction of 9 bushels per acre over the average of last year, upon a crop grown under exactly similar conditions, shows very clearly the uncertainty of our

climate, and our dependence upon it. Although not shown in the table, the amount of offal, or immature grain, is exceedingly large this year, and I fear it will be found to be very generally so. The only consolation which the grower possesses is, that he is receiving a better price for his product. Taking the population of the United Kingdom in the middle of the harvest year, 1897-98, at rather over 40 millions, and reckoning a consumption of 6 bushels of Wheat per head, rather more than 30 million quarters will be required. The area under Wheat in the United Kingdom in 1897 was 1,936,041 acres, and taking 26 $\frac{1}{2}$ bushels (of 60 lb.) per acre as a basis upon which to calculate the crop of the country, we get 6 $\frac{1}{2}$ million quarters. Deducting 2 bushels per acre for seed, it leaves nearly 6 million quarters available, and a requirement of 24 million quarters of imported Wheat. Whether the very high estimate I adopted as the yield per acre of our Wheat crop last year was actually exceeded, or whether the higher price of Wheat led to a reduction in the consumption, cannot be readily ascertained, but the imports amounted to nearly 1 $\frac{1}{2}$ million quarters less than the estimate required for consumption, at 6 bushels per head of the population. *J. B. Lawes, Rothamsted, September 23.*

SWITZERLAND.

M. FRÖBEL'S NURSERY AT ZURICH.

ZURICH affords a marked contrast to other Swiss towns. It is modern to the core; its railway station as crowded in proportion as any London station; its streets full of bustling life, tramways here, tramways there, boulevards like those of Paris in miniature, tree-planted streets, an imposing cathedral, and beyond all, the lake renowned in song.

There are, no doubt, old houses and old streets, for Zurich is as old as any city of the Confederation, but the hasty traveller in passing straightway to his destination does not see them, and there is, or people say there is, an imposing view of the distant Alps from the borders of the lake. It may be so, but, as far as we are concerned, we viewed the mist, but missed the view, as in so many other places this September. As we succeeded in our direct purpose to see M. Fröbel and his famous nursery, we must not complain if secondary objects were not attainable. While in his neat sanctum we are awaiting M. Fröbel's arrival, we call to mind the services he has rendered to horticulture, and we bethink ourselves of Begonia Fröbeli, amongst others, and sure enough there is hanging before us a document dated August 4, 1875, and signed by three well-known and honoured horticulturists, two of whom, Charles Noble and Archibald F. Barron, are still with us; whilst J. Townshend Boscawen has been gathered to his fathers. There too is the diploma of corresponding member of our Royal Horticultural Society, to which Mr. Fröbel points with a pride which shows that the honour is prized by our foreign friends. Stepping outside, our host laments that we have come at the worst season of the year, that now, "Oh, there is little to see; had we come in May or June it would have been different." It would have been, no doubt, but we are as used to such assertions on the part of garden-owners of all degrees as we are to the universal complaint on the part of gardeners of want of an adequate staff. We know by long experience how to discount such statements, and assuredly we found M. Fröbel's nursery, even in the middle of September, extremely interesting. We cannot pretend to dilate upon more than a small proportion of the things we saw; but in these days of lamentation over foreign competition, and of self-depreciation, it was exhilarating to find a large assortment of elegant garden pottery for decorative purposes from—Maple & Co.! There were French goods, American and Austrian wares, and wares from other countries, including Bamboos from Tonquin; but Maple & Co. amply held their own. We are accustomed to think of the Tottenham-Court-Road firm as dealing in furniture only, and not as horticultural sundriesmen. We made the discovery to the

contrary when climbing to the roof of M. Fröbel's warehouse for the purpose of seeing a magnificent hardy climber, with leaves much like those of a Scarlet-runner Bean, and which covers the walls of the house with a noble vesture of foliage. But why get on the roof to see what can be seen as well below? The answer is afforded by the circumstance that the flower-spikes of deep violet pea-shaped flowers are produced, for the present, at this elevation only. The plant is *Pueraria pachyrhiza*—we know it in England by another name, and under glass, but we have not seen it in flower, unless our memory is somewhat at fault. With like caution as to memory we record our impression that the flower has been figured in the *Revue Horticole*. In this as it may, we have here a very noble climber, which we may infer would be as hardy in England as it is in northern Switzerland. Coming down from the roof we proceed to look round, but on trying to recall what we saw, we find it impossible to classify our notes, but must just take things as we found them. Humulus japonicus variegatus is a less robust free-growing climber than the *Pueraria*, but its leaves are here unusually brightly variegated. The flowers hitherto produced are all males, so that propagation by seed is not possible. Some day, no doubt, female flowers will be produced, and then seedlings will be obtained. A bush of *Cotoneaster horizontalis*, which our condor or saye should be called *C. Davidiana*, attracts attention by its prostrate habit and profusion of small scarlet berries. "Oh, que c'est beau," remarks M. Fröbel, dropping into French for our benefit, and going on to say that the leaves, which are deciduous, become, ere they fall, almost as brilliantly coloured as the berries.

A tank full of Marliac's hardy Water-Lilies is next noted, and M. Fröbel points to a seedling of his own as of a deeper crimson colour than any yet raised. Moreover, it is one whose origin is known. Many years since our valued friend, the late Prof. Caspari, described a rose-coloured variety of the common white Water-Lily obtained from Sweden, and called it *Nymphaea alba* var. *rosea*. From seeds of this rose-tinted Water-Lily, M. Fröbel claims to have obtained the very richly-coloured variety of which we saw small flowers, the last of the season. This is to be called *Nymphaea Otto Fröbel*; at least, seeing what its origin is, we hope it will not be called *N. Fröbeli*. From *Nymphaeas* to *Opuntias* seems a long stride, but the two sets of plants are not far apart in this nursery; and here also is a bed of *Opuntia humilis*, *O. Rafinesquii*, *O. missouriensis*, and others, including *O. cananichia*, which M. Fröbel prefers to the rest. The dry summer climate of Zurich probably suits these plants better than our moisture-laden atmosphere; but when we ventured to make a remark of this nature, a grim smile passed across the face of our host, as he asked us whether we had not had experience that it did rain in Switzerland!

Close by were the dead flower-stalks of the noble Bell Flower, known as *Ostrowskya magnifica*, a plant which has proved somewhat disappointing in England. Two months entire rest after flowering in M. Fröbel's prescription for its well-doing. Next came a large batch of white-flowered *Ramondia*, of which a small proportion revert to lilac. White-flowered *Pulsatillas* were equally abundant here, though of course not in bloom at the time of our visit. The double white *Colchicum*, however, was in full flower, and is much used for bouquet work.

While speaking of white flowers, M. Fröbel points out that the variety of Japanese *Anemone* known as Lord Ardilaun is superior to the one called *Lady Ardilaun*, which is not altogether polite. Many of the blooms of Lord Ardilaun presented a "hen-and-chicken" condition, owing to axillary proliferation, or the production of flower-stalks in a ring within the perianth-lobes. Close by, under a spreading tree is a clump of *Asarum europæum*, a plant which M. Fröbel considers as excellent for covering bare patches under the shade of trees, a valuable hint to those who have a sufficiency of the plant. *Rubus xanthocarpus*, a Chinese species, is next shown as a dense low-growing bramble with slender prickly stems, elegant pinnate foliage, and yellow, agreeably-tasted fruit.

and coke are dear in Zurich, and every effort made to reduce the fuel bill, consequently the plants which in England are rarely suffered to be grown for at least part of the year. That the plants gain greatly in robustness here, where batches of *Ochna multicaulis* in a most thriving condition, and which assured flower much more freely than when they are in the stove. *Stephanotis floribunda*, *Arifolia*, *Æchynanthus*, and many other plants afford corresponding illustrations; but in summer is a different thing from its winter representative.

Of all the Orchids grown here would be the collection is large, the specimens of size, the leaves firm, healthy, and leaving no doubt of the desired. Speaking generally, abundance of moderate heat, great humidity, and ample

American *C. spectabile*. We were shown the only two plants raised from this cross, and the foreman professes his ability to see evidence of the cross in the two little seedlings before us. We shall wait before we say anything more than that it may be so.

M. Fröbel's nursery is well known as the home of many choice alpine and herbaceous plants. These are grown for propagating purposes in frames and pots, but others are planted out on rock-work. One such rockwork resembles in form the pits in which our farmers store their Mangels. It consists of a mound of porous earth, sloping on two sides, and flat on the top. On the sides of the mound, bricks of cement are placed flat against the surface of the mound, but sloping inwards and downwards. Between the chinks the plants, such as *Androsaces*, root freely. The effect is not picturesque, but there can be no question that the plants like their position.

BIRDS USEFUL TO FARMERS AND GARDENERS.

(Continued from p. 207.)

THE SPARROW-HAWK (*Accipiter Nisus*).—This hawk is somewhat smaller than the kestrel or wind-over (*Falco tinnunculus*), described in a previous leaflet. The male is about 12 inches in length, and the female is generally from 2½ to 4 inches longer. The upper part of the body of the male is of a bluish-slate colour, while the under part is brown, or greyish-brown, with bars of darker colour. In the female the body is brown, and the under parts light grey with brownish bars. Both male and female have a blue beak and yellow legs and feet. The wings are short. Unlike the kestrel, the sparrow-hawk generally builds a nest of sticks in trees, in Oaks and Firs by preference, and usually in the depths of woods. In the beginning of May it usually lays five or six round eggs of a bluish-green colour with shades or spots of brown.

The sparrow-hawk may be distinguished at once by its peculiar flight. At one time it is seen high up in the air, propelling itself by the use of its wings, then skimming along for a while without their motion. When in pursuit of prey it dashes with incredible velocity through trees and underwood, into stack yards and poultry yards, and swoops down with almost lightning rapidity upon a sparrow or other small bird, or, it may be, a young chicken, frequently quite regardless of the close presence of man.

Though termed sparrow-hawk, it does not confine its attention to sparrows, but captures many kinds of small birds, especially chaffinches and other finches, blackbirds, thrushes, wrens, and titmice. Ritzema Bos says, in his *Tierische Schädlinge und Nützlinge*, that it is considered injurious in Germany, because it kills so many insect-destroying birds. In France, according to Brocchi, it has the same reputation.

The sparrow-hawk has a bad character in Great Britain, at least among game-keepers and poultry-women. This is justified to some extent, for it undoubtedly takes young partridges, pheasants, and rabbits, particularly when it has young ones; and is a far worse offender in this respect than the kestrel, which rarely takes birds of any kind. Careful observers who have watched the nests of sparrow-hawks, have remarked that the feathers round the nest and in the pellets are chiefly those of small birds, but the feathers of game and chickens are sometimes found. If the little piles of feathers and bones often seen by the sides of woods and hedgerows, and on banks, constituting the remains of a sparrow-hawk's meal, are examined, it will be noticed that they are in the main those of small birds and mice, and not infrequently of frogs and rabbits. Selby states that in a nest containing five young sparrow-hawks he found a lapwing, two blackbirds, a thrush, and two green linnets, all recently killed, and partly divested of their feathers. It is the natural habit of the sparrow-hawk to hunt for food towards dusk, when young partridges are safe under the hen, and young pheasants are in their coops or under their foster-mothers; but when a pair have young in their nest, they hunt early and late, and at this time, without doubt, they take young game-birds, and are a cause of considerable anxiety to game-keepers.

Mice, voles, and insects are sometimes taken by this hawk. Seeböhm says that it is beneficial because it kills wood-pigeons, which are a fearful pest to the farmer in some localities. This is corroborated in the evidence cited in the Report on the Protection of Wild Birds of the House of Commons Committee in 1873, to the effect that the wood-pigeon is the natural food of the sparrow hawk, which is the only bird that can catch it.

Upon the whole, in view of this evidence, and of the opinions of several well-informed writers, and of observant countrymen, on the habits of birds, the sparrow-hawk ought not to be ruthlessly destroyed, and farmers would do well to exert their influence to prevent the wholesale and indiscriminate destruction of this and other hawks, and of owls and other useful birds, as well as such animals as weasels and stoats, which keep down rats, mice, voles, and other vermin.



FIG. 69.—VANDA AMENA. (SEE P. 226.)

are the main factors upon which M. Fröbel's success in the cultivation of these plants, and are certainly very satisfactory. Moreover, the method of growing Orchids with other plants, not, in all cases, afford them the luxury of a separate house. Among Orchids, mention may be made of *Pleurothallis Rozii*, *Vanda* in flower, *Cattleya Dowiana* in flower, *Phalaenopsis Schroderianum*, *Catasetum*, *Dendrobium Venus* ×, a cross between *D. Falconeri*; *Angraecum* of various species, which do well; and the usual *Cattleyas*.

The blocks on which many of these are grown, of Yew, a wood we do not remember to have elsewhere for like purposes. Crossing and grafting are carried on vigorously. We can only mention between *Cypripedium Curtisii* and *C. bellatulum* a very robust offspring. There are also in which *C. Chamberlainianum* takes the place of perhaps the most extraordinary of all is *C. C. Lawrenceanum* and the hardy North

Porous bricks, such as we use in England, would probably be better than those of cement, as holding moisture better. The mounds are of moderate height, so that a movable glass-roof can be placed over them as a protection from the rain when necessary. The rare, pink-flowered *Asperula athoa* was in bloom on this mound, and also the yellow-flowered *Erodium chrysanthum*, the blooms of which produce carpels only, and no stamens, so that no seeds are formed. *Epilobium obovatum*, which some fail to grow, does well here. *Viola delphinantha*, a very rare species from Mount Athos, is also growing here.

Regretting that our limited time forbade further investigation, and especially that it rendered impossible a visit to the nursery of trees and shrubs, which, in its way is, we believe, as interesting as the one we are now in, we were obliged to bid our kindly host farewell; and we recommend all plant-lovers who visit Zurich to make a point of seeing these nurseries, and, profiting by our experience, to allow themselves plenty of time for so doing.

DO ORCHIDS DEGENERATE?

By the kindness of Sir Trevor Lawrence, Bart., his Orchid grower, Mr. W. H. White, has prepared and forwarded a list of some of the species of Orchids of which the identical plants enumerated have been in the Burford collection for many years. The list is of the greatest interest as bearing on our remarks in the *Gardeners' Chronicle*, Sept. 18 last. Many of the plants enumerated come under the heading of difficult plants to manage, in some collections at least, and during their life at Burford, probably many scores, if not hundreds of the same species have been imported and cultivated for a time and then died. The specimen of *Renanthera coccinea* is of special interest, as it can be traced back to one of the earliest importations of that plant. It was in Morse's nursery many years before it came to Burford, and it is probably one of the oldest epiphytal Orchids in cultivation.

The following list comprises some of the Orchids which have been many years in Sir Trevor Lawrence's Collection:—

<i>Aerides Lobbi</i> (Russell) 1882	<i>Dendrobium fimbriatum</i> , 1882
" 1877	<i>Dalhouseanum</i> , 1882
" <i>crassifolium</i> 1877	" <i>Chrysanthum</i> 1882
" <i>Godefroyae</i> 1883	" <i>nobile</i> very old, no date
" <i>falcatum</i> 1882	" <i>tortile</i> 1884
" <i>Lawrenciae</i> (original plant) 1882	" <i>palpabile</i> , 20 years
" <i>suavisolium</i> (several) 1877	" <i>Schroderae</i> , D. Farmeri, D. thry-
" <i>Houllettianum</i> , about 20 years	" <i>chrysotoxum</i> , D. and D. suavisol-
" <i>quinque-vulnerum</i> 1881	" <i>num</i> , about 20 years
" <i>expansum</i> 1882	" <i>Gubertianum</i> 1877
" <i>affine</i> 1880	" <i>Falconeri gigan-</i>
" <i>Larperia</i> , over 20 years	" <i>teum</i> (Veitch) 1879
" <i>Fieldingi</i> (Day) 1881	" <i>bigibbum album</i> 1880
" <i>Schroderae</i> , about 15 years	" <i>lituiflorum candi-</i>
" <i>viride</i> 1874	" <i>dum</i> 1879
" <i>Reichenbachianum</i> , nearly 20 years	" <i>Phalenopsis</i> , part of the original
" <i>maculatum</i> 1881	" <i>plant</i> 1877
" <i>Saccolabium Blumei</i> 1879	" <i>Huttoni</i> 1877
" <i>retusum</i> 1875	" <i>micans</i> and D. longi-
" <i>ampullaceum</i> 1877	" <i>cornu</i> 1885
" <i>Angusium sesquipedale</i> , over 20 years	" <i>revolutum</i> 1887
" <i>Kotschy</i> , first importation	" <i>Parishi</i> 1879
" <i>Scottianum</i> 1877	" <i>superbum Burkel</i> 1881
" <i>perforatum</i> 1878	" <i>seidii</i> 1877
" <i>distichum</i> 1884	" <i>Treacherianum</i> 1883
" <i>blabum</i> , about 2 years	" <i>Brymerianum</i> , over 30 years
" <i>Challianum</i> (Day) 1881	" <i>Harveyanum</i> 1882
" <i>Leonis</i> 1885	" <i>Hughii</i> (Lee) 1888
" <i>eburneum</i> 1881	" <i>Thunia Marshallii</i> and T. Bensoni, many years
" <i>falcatum</i> 1884	" <i>Lelia Gouldiana</i> had 17 spikes last year
" <i>Barochilus Fitzgeraldi</i> 1880	" <i>Large specimen</i> bought in 1888
" <i>Vanda teres</i> , over 20 years	" <i>acuminata</i> 1879
" <i>suavis</i> (Ealing Park) 1879	" <i>praestans</i> 1881
" <i>tricolor</i> Bassettii, many years, no date	" <i>Ferrini</i> 1881
" <i>Dalkeith</i> var., 20 years	" <i>Perrini alba</i> 1887
" <i>suavis</i> 1880	" <i>enspatha</i> 1886
" <i>tricolor</i> 18-0	" <i>elegans</i> Turneri, 1877
" <i>lanceolata</i> Boxalli 1884	" <i>and</i> 1877
" <i>insignis</i> 1882	" <i>anceps</i> and varie-
" <i>Hookeriana</i> 1882	" <i>ties</i> 1873
" <i>furva</i> , 10 or 12 years	" <i>cinnabarina</i> 1883
" <i>Lowi</i> 1877	" <i>Lawrenceana</i> 1881
" <i>Cathearti</i> 1877	" <i>purpurata Brylana</i> 1881
" <i>Kimballiana</i> 1889	" <i>Cattleya dolosa</i> 1881
" <i>Amerisana</i> 1889	" <i>Skinneri alba</i> 1882
" <i>curvuleuca</i> 1884	" <i>maxima</i> 1884
" <i>Renanthera coccinea</i> , China 1814, came into our collection from Morse 1882	" <i>exoniensis</i> 1877
" <i>matutina</i> 1881	" <i>Trianei</i> 1875
" <i>Phalenopsis Esmeralda</i> 1882	" <i>Beckhouseana</i> 1884
" <i>Marie</i> 1886	" <i>Skinneri</i> 1881
" <i>Luddemanniana</i> 1877	" <i>Mossii</i> 1877
" <i>cornu cervi</i> 1877	" <i>Reineckiana</i> 1886
" <i>intermedia Portei</i> 1881	" <i>Wagneri</i> 1886
" <i>Schilleriana</i> , amabilis, grandiflora 1877	" <i>chocensis</i> 1879
" <i>violacea</i> 1880	" <i>Lawrenceana</i> , original 1835
" <i>Phaius tuberculatus</i> 1881	" <i>crispa</i> 1-78
" <i>Celia macrostachya</i> 1877	" <i>Porcivalliana</i> 1882
" <i>Baueriana</i> 1877	" <i>Gaskelliana</i> 1-86
" <i>Cattleya hyacinthina</i> 1877	" <i>Mardellii</i> 1882
" <i>Cleisostoma crassifolia</i> 1877	" <i>Fausta</i> 1883
" <i>(Dodgeon)</i> 1883	" <i>gigas</i> 1876
" <i>Spathoglottis Lobbi</i> 1877	" <i>Warneri</i> 1881
" <i>Microstylis metallica</i> 1877	" <i>Dormaniana</i> 1881
" <i>Cymbidium chloranthum</i> 1882	" <i>Mondellii</i> 1881
" <i>Stanhopea</i> (various) 20 years	" <i>labiata</i> , old var. many years no date
" <i>Sobralia</i> (various) 20 years	" <i>luteola</i> 1839
" <i>Cattleya</i> , over 20 years	" <i>Brassavola Digbyana</i> 1876
" <i>Elianthus</i> , sp. 1886	" <i>Leptotes bicolor</i> 1888
" <i>Dendrobium Kingianum</i> 1880	" <i>Cologne glandulosa</i> 1877
" <i>tridentatum</i> , over 20 years	" <i>Cunninghamii</i> 1880
" <i>Almsworthii</i> " 1883	" <i>graminifolia</i> 1888
" <i>undulatum</i> " 1883	" <i>corrugata</i> 1877
" <i>purpureum</i> 1888	" <i>laevigata</i> 1877
" <i>heterocarpum album</i> (Yates) no date	" <i>Sanderiana</i> 1886
" <i>Dominii</i> , very old, no date	" <i>speciosa</i> 1877
	" <i>ocellata</i> 1878
	" <i>barbata</i> 1884
	" <i>Masaganea</i> 1880
	" <i>tomentosa</i> 1885
	" <i>Eria anchoritae</i> 1882

<i>Scuticaria Hadweni</i> and Steell 1877	<i>Maxillaria grandiflora</i> 1883
<i>Laelipais domingensis</i> , 20 years	" <i>lepidota</i> 1878
<i>Schomburgkia tibeticus</i> 1882	" <i>Sanderiana</i> 1883
<i>Bulbophyllum grandiflorum</i> 1887	" <i>picata</i> 1886
" <i>longispalum</i> 1887	" <i>Rhombia</i> 1879
" <i>aureicornum</i> 20 years from Lady Dorothy Nevill's Collection, 1879	" <i>Angulosa uniflora</i> 1881
<i>Bulbophyllum barbatum</i> , B. Thoursii, and Cirrhoptalum Medusae, and C. Cunninghami 1877	" <i>Ruckei</i> 1882
<i>Bulbophyllum siamense</i> 1889	" <i>eburnea</i> 1877
<i>Eulophia guineensis</i> 1889	" <i>Lycastes</i> , various, from 1879
<i>Epidendrum nemorale</i> 1879	" <i>Nanodes Medusae</i> 20 years
" <i>radicans</i> , 50 years	" <i>Sophranites grandiflora</i> , 1877 and 1882
" <i>Pseud-epidendrum</i> 1881	" <i>Odontoglossum</i> , mullus from Farnham 1874
" <i>prismatocarpum</i> 1881	" <i>coronarium</i> " 1876
" <i>xanthinum</i> 1881	" <i>Intepurpureum</i> " 1879
" <i>soeprum</i> (Lee) 1888	" <i>Roseli and Cervan-</i>
" <i>evectum</i> (Dr. Paterson) 1879	" <i>leoli</i> 1877
" <i>crassifolium</i> (Dr. Paterson) 1879	" <i>triumphans</i> and Halli 1879
" <i>myrianthum album</i> 1886	" <i>Pascatorei</i> 1877
" <i>purum</i> 1882	" <i>citrusum</i> 20 years
" <i>aracoglossum</i> 1882	" <i>crispum</i> 1874
" <i>vitellinum</i> 1879	" <i>flaveolum</i> 1880
<i>Brassavola stricta</i> and Perrini 1880	" <i>asperum</i> violaceum 1881
<i>Cataeum acurra</i> , 2 years	" <i>facetum</i> and Edwardi 1880
" <i>intergerium</i> 1887	" <i>crisatellum</i> 1883
" <i>barbatum protididum</i> 1888	" <i>pronopetalum</i> 1877
<i>Mormodes luxatum</i> 1884	" <i>ramosissimum</i> 1882
<i>Miltonia vexillaria</i> , from 20 years	" <i>navium</i> , about 20 years
" <i>polybulbum</i> 1887	" <i>grande</i> 1889
<i>Brassia Giroudiana</i> 1880	" <i>crinitum sapphirinum</i> 1887
<i>Chysis Chelsoni</i> 1879	" <i>Andersonianum</i> 1877
" <i>Sedeni</i> 1888	" <i>Ruckerianum</i> 1880
<i>Trichopilia Galle etiana</i> 1885	" <i>Wilkeanum</i> 1882
" <i>suavis alba</i> 1882	" <i>guttatum</i> Bate-
" <i>crispa</i> 1879	" <i>manni</i> 1881
" <i>lepidia</i> 1879	" <i>Bictonense album</i> 1881
<i>Platyclinis glumacea</i> 20 years	" <i>Harryanum</i> 1888
" <i>Cobbiana</i> 1880	" <i>pulchellum</i> 1877
<i>Cypripedium Fairleanum</i> 20 years	" <i>Rucker's variety from The Poles in</i> 1880
" <i>caudatum</i> Wallisi 1879	" <i>Uro Skinneri</i> 1889
" <i>Masterianum</i> 1883	" <i>retusum</i> 1887
" <i>vexillarium</i> 1879	" <i>Oncidium</i> , undulatum 1884
" <i>bellatulum</i> 1886	" <i>macranthum</i> 1877
" <i>niveum</i> 1888	" <i>splendens</i> 1888
" <i>Godefroye</i> 1888	" <i>corbolla</i> 1880
" <i>concolor</i> 1886	" <i>cucullatum</i> 1882
" <i>Druryi</i> 1881	" <i>Marshallianum</i> 1881
" <i>praestans</i> 1883	" <i>sibiricum</i> (James), from 1877

There are also a great number of Cyp. species and hybrids too numerous to mention that have been in the collection a great number of years

<i>Bletia hyacinthina</i> 1888	<i>Trichostema suavis</i> 1882
<i>Grammatophyllum speciosum</i> 1887	<i>Ada aurantiaca</i> 1884
<i>Peristyle elata</i> 1887	<i>Cryptophoranthus Day-</i>
<i>Zygopetalum Burkel</i> 1884	" <i>anus</i> 1881
" <i>Mackayi</i> 1877	<i>Madevallis macrura</i> , about 1876
<i>Cologne Forstmanni</i> 1886	" <i>Davii</i> 1877
" <i>And many very old plants of C. cristata</i> 1877	" <i>Veitchii</i> 1879
<i>Uropetalum Lindeni</i> 1877	" <i>corniculata</i> 1881
<i>Arpophyllum giganteum</i> 1877	" <i>Schlimi</i> 1883
" <i>spliatum</i> 1886	" <i>tovarensis</i> 1880
<i>Maxillaria nigrescens</i> 1879	<i>Madevallis of the Har-</i>
" <i>Turneri</i> 20 years	" <i>ryana</i> and ignea types date from 1875, and various dwarf - growing species, principally botanical curiosities, from 1880
" <i>venusta</i> 1878	<i>Restrepia antiferia</i> 1877

THE CONIFERÆ OF THE SANTA LUCIA MOUNTAINS.

THE Santa Lucia Mountains take their name from their highest peak, which rises near the middle of the chain in Monterey County to an elevation of 6,100 feet. These mountains extend along the coast of Monterey and San Luis Obispo Counties from Monterey Bay southward, parallel with the coast. South of San Simeon Bay they trend towards the south-east, losing their identity in the low hills of the Carina Plain. From Pt. Sur to Pt. Corda they present a precipitous front to the ocean, rising abruptly from 3,000 to 4,000 feet from the very edge of the ocean. Numerous mountain streams come tumbling down through quickly descending cañons and widen them delta-like, forming a nail tract of comparatively level land. These little areas are very fertile and well supplied with the purest water; so that, in spite of their isolation and limited area, they have been taken up by settlers, who are known throughout the county as "The Coasters."

These mountains are especially interesting to the botanist, since they are the southern limit of the flora that follows *Sequoia sempervirens*, and is so characteristic of the northern coast forests. They also contain species most abundantly represented in the Sierras, as well as many peculiar to themselves. These different floras have their representative among the Coniferae, so that the distribution of the Coniferae will indicate, somewhat, the distribution of the different floras.

Sequoia sempervirens and *Pseudo-tsuga taxifolia* are associated together, as in the forests further north; but the latter is not confined to the coast cañons, being found also within sight of the ocean on the ridge above, near the Los Burros mine, and in other places not visited by the writer. The Redwoods scarcely venture above the fog line, which, in these steep mountains along the coast, is distinctly visible to the eye, as well as instantly perceptible to the sense of feeling. They are rarely found outside of the cañons, since the steep slopes of the hills offer an environment that is too dry. The soil is dry and the air also. It must not be thought that the Redwoods and Spruces here are miserable specimens. One Redwood-tree in Willow Creek Cañon is 12 feet in diameter, and a spruce-fir tree in the same cañon is more than 3 feet through. This Redwood tree is said to be the largest in Monterey County, and it is certainly a fine specimen.

On the summit of the ridge from which the ocean can be seen, *Pinus Coulteri* is the most noticeable tree. Somewhere in these mountains, in 1831, Coulter collected the first known specimens of this Pine, noted for its enormous cones. His specimens probably came from near Santa Lucia Peak, since he records it as growing with *Pinus Lambertiana*, and it is only there that the two species are found together. *Pinus Coulteri* generally grows on exposed and lofty ridges, but in these mountains it extends down the sides of the mountain on the eastern slope almost to the banks of the Nacimiento River, where it is associated with *Pinus Sabiniana*, the Grey-leaf Pine, common on the low hills of the Nacimiento and San Antonio Valleys.

On the same ridge where *Pinus Coulteri* abounds, *Pinus ponderosa* is also abundant, often growing with *Pinus Coulteri*, but frequently forming exclusive groves of scattered trees.

One poor little bush of *Juniperus californica* was seen near a never-failing spring on the Los Burros trail. Probably the species is better represented in parts of the mountain not visited by the writer. It is said to be common near Cruikshank's ranch. The trees so far noted can all be seen when crossing the range from the Los Burros mines, on the ocean side to the San Miguelito ranch, on the Nacimiento river.

Another trail further north is now known as the Plaskett trail; formerly it was called Mansfield's trail. *Pinus tuberculata* is the most noticeable Conifer on the eastern side of this trail, and the trees grow almost to the base of the mountain. Its lightly-olad branches, and numerous persistent cones, readily distinguish it from the other Conifers.

Looking down into the deep cañon of San Miguel Creek, south of the trail, but near by, and off into the distant cañon on the north that marks the headquarters of the Nacimiento River, peculiar trees can be seen lifting spire-like summits above all the others. These trees are known botanically as *Abies bracteata*, the rarest existing Fir, and confined to a few cañons of these mountains. When once seen, these trees can be recognised as far as the eye can reach. While there are few individuals, comparatively, the number of small trees coming up in San Miguel Cañon assure us that the species is in no danger of extermination.

Mr. E. C. Mansfield and the writer visited this locality on May 1 of the present year, to obtain flowering specimens, which had, until then, never been collected. The trees were in full flower; the pollen had begun to float through the air, and near the tops of all large trees female flowers were plainly to be seen. Coulter records that only the middle branches bear cones. This was not so with the trees observed in this cañon. Owing to the great difficulty experienced by Mr. Mansfield in reaching the topmost boughs and in

specimens, only a few pistillate flowers were seen, and these Mr. Mansfield carried down, and the twigs, to which they were attached, in such, so as to keep them intact on the branches. The specimens are in the herbarium of the Californian Academy of Sciences, duplicates having been sent to S. Sargent to be represented in the *Silva of America*. The staminate flowers were more easily collected, being so much more easily dried.

Firs seen in this cañon had lost their lower branches, and therefore lacked the symmetrical outline from base to summit which the more perfect ones exhibited. The writer some years ago

bird-nests set with diamonds. The beauty of the cone-laden branches can perhaps be imagined.

Further north, near the foot of Santa Lucia Peak, a third trail (spoken of above) crosses these mountains. It is known by the name of the Santa Lucia trail, and is the most rugged but most attractive of all the trails. Long ago it was much travelled by the Indians, but now a traveller rarely crosses the mountain by that route. It passes through the only grove of *Pinus Lambertiana* now left in these mountains. The writer can never forget the amazement and delight experienced when coming upon this grove. One or two young trees had been seen on the way up the eastern slope, but their identity was only guessed

LYCASTE DENNINGIANA.

Our illustration (fig. 70) represents this very fine species, which was originally described by Professor Reichenbach in the *Gardeners' Chronicle*, December 23, 1876, p. 808, the plant being dedicated to Mr. Denning, then gardener to Lord Londesborough. For many years the plant has been very rare, and it was a pleasant surprise to see it at the Royal Horticultural Society's meeting on September 21, on which occasion it was shown by F. W. Moore, Esq., Director of the Royal Botanic Gardens, Glasnevin, Dublin, the home of so many rare and curious Orchids and other plants. *Lycaste Denningiana* is a native of Ecuador. Its fine flowers have the sepals and petals very pale yellowish-green; the showy labellum reddish-orange, changing to red-brown. When shown it received an Award of Merit.

BOTANICAL EXPLORATION IN YUNNAN.

DR. HENRY, the well-known Chinese botanist, is now stationed in Yunnan. The following extract from a letter recently received from him gives some interesting particulars of this botanically rich region:—

"Customs, Mengtse, par Laokay, Tonking.

"September 5, 1896.

"As regards botany, e.g., this region—on the outskirts of which I was stationed at Ichang, and now am here again on another border of it at Mengtse—is, I imagine, the most interesting in the world. It is evidently the headquarters of most of the genera which are now spread all over Europe and Asia in great part. The geology is quite unknown, and it is a combination of knowledge of the ancient history of the region geologically, and of the flora, which will explain much that is obscure in the present distribution of species. I have told you of the immense, universal, and peculiar deposit of red clay which covers Yunnan, extending into the Shan States. This perhaps speaks of glaciation, and perhaps it is to glacial phenomena that the present richness of the flora is due.

"I intend to go on collecting vigorously, and hope to rival Delavay in Yunnan. His 3000 species will be hard to beat.

"The country immediately around Mengtse is not so very rich, as it is bare of wood and water; but in all directions at two to four days' distance there is splendid country. I have just had a native collecting in the mountains south of the Red River near the French frontier, and he has brought back from the virgin forests of a high mountain about 100 interesting species, e.g., he has re-found *Tetracentron* (a genus of *Trochodendrea*), perhaps a new species, at any rate a variety, of the Hupeh plant. He has also brought me undoubted wild Tea. Hitherto the Tea-plant has been found wild only in Assam, the cases of its spontaneity recorded from China being very doubtful. In all my trips in Szechwan and Hupeh I never met it. The present specimens are above suspicion, coming from virgin forest, and at an immense distance from any Tea cultivation, the nearest being P'u-eh, 200 miles west. Bretschneider in *Botanicon Sinicum*, part ii., p. 130, has some remarks on the antiquity of Tea in China, and it was not till the sixth or seventh century that it came into general use. It is probable that it was found wild in these southern provinces, which did not form a part of the ancient Chinese empire, and I daresay it will be found wild in these mountains from Mengtse to Szemao. It is not probable at all that Tea came so far away as Assam.

"My native also brought back some interesting *Feras*, pretty *Cyrtandrea*, &c., and some specimens in fruit of the curious *Lysimachia*, the leaves of which have a delicate but strong fragrance. They are used for scenting hair-oil by the Chinese. Perhaps some of the seed is ripe enough for me to send to you for cultivation.

"I have had enquiries from a London firm about soap-trees. They wish to buy the fruits of these in quantity, as they have brought out some patent or

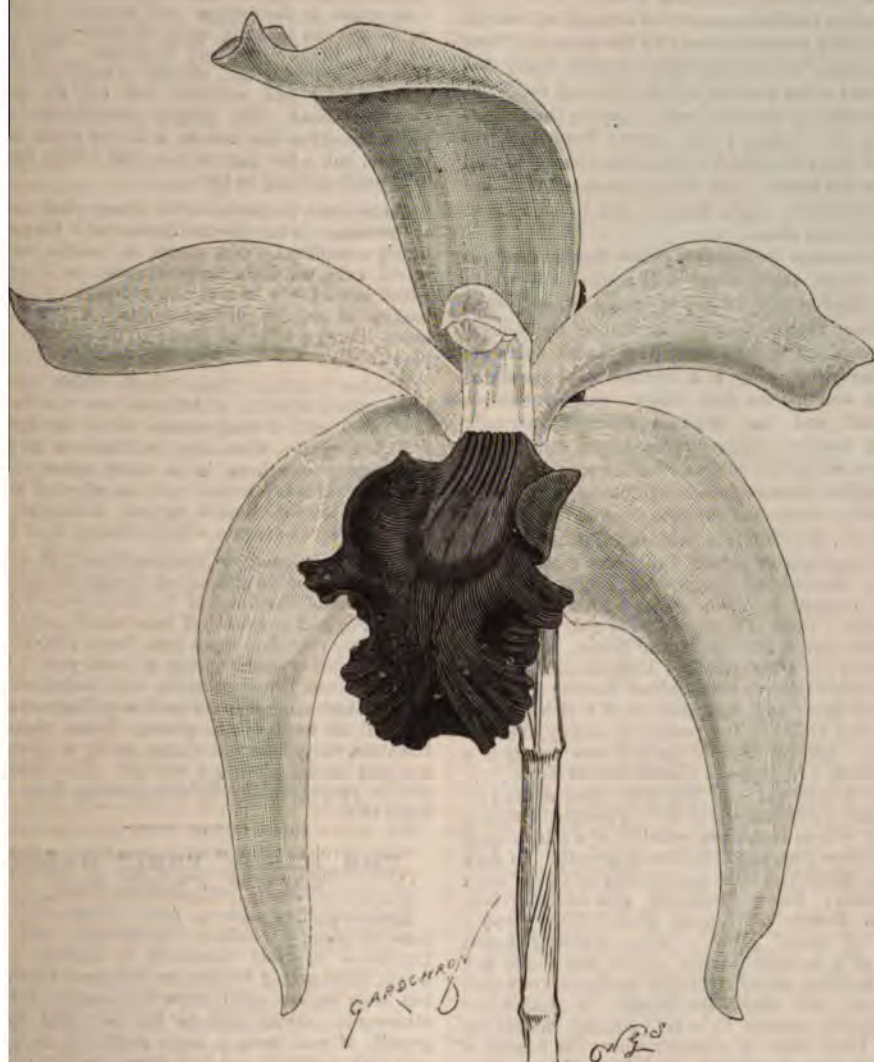


FIG. 70.—FLOWER OF LYCASTE DENNINGIANA: SEGMENTS PALE YELLOWISH-GREEN; LIP REDDISH-ORANGE.

o trees in a gulch further north, which the Lucia trail crosses, where the lowest branches almost to the ground, and the trees tapered to cones with long, pointed tips waving like in the breeze. The trunk, at the upper end down long, slender branchlets, that droop like those of the Weeping Willow or Weeping

Even the upper boughs have a tendency to droop downwards, thus rendering the foothold of an arduous climber somewhat precarious, since the slightest breath of wind sways the slender upper axis round.

Mountaineers are all enthusiastic in their opinion of this tree, which they name the "Silver Tree." When the cones have attained full growth they have a purplish hue, and the long, slender, drooping branchlets become gemmed with drops of resin, so that the whole part of the tree seems full of odd-looking

at until the magnificent trees far above and beyond were discovered. *Pinus Lambertiana* is said to have been abundant formerly on the slopes of Santa Lucia Peak, and a few trees are yet left. *Libocedrus decurrens*, also, then grew on the mountain. While the San Antonio Mission flourished, the best timber on Santa Lucia Peak was cut down, and these two valuable species were almost utterly destroyed. In those days it is said that the Nacimientos and San Antonio Valleys were "black with Indians." Their houses, fields, and aqueducts gave life to the hills and valleys over which the beautiful Oaks alone now seem to hold sway. Were it not for the few survivors in almost inaccessible places, and the timbers and other relics of the San Antonio Mission, the story of the former prevalence of the Sugar Pine and Incense Cedar would scarcely be credited." *Alice Eastwood*, in "*Erythea*," June, 1897.

other which demands a large consumption of these fruits. I suppose the *saponin* therein is the base of the patent (for washing fine fabrics, hair wash, &c., perhaps). They didn't say what their patent was.

"A large number of soap-trees occur in China, and I would write a note for the *Bulletin* on the subject, as it is of perhaps considerable commercial importance, but one thing is wanting. The species of *Gleditschia* require revision. Four are mentioned in the *Index Fl. Sin.*, i., p. 208, *et seq.*, but since then there is a new one from Hupeh and another from Yunnan. There were also specimens of mine at Kew from *S. Formosa*, which are not yet matched with any described species.

"The chief soap-trees are *Sapindus Mukorossi*, *Gymnocladus sinensis*, and all the species of *Gleditschia*, excepting *G. officinalis*, Hemsley, which has a small pod only used as a drug. The fruits of these are very generally used in China in lieu of soap, and for washing the hair the Chinese ladies say they are superior to alkaline soaps.

"I have tried, in vain, to get a Lolo teacher to instruct me in the language, and teach me their method of writing, now almost gone out of use, if not entirely. The MSS. of the Lolos are as yet undeciphered.

"I told you about the plague, its ravages amounting to actual decimation of the inhabitants of Mengtee town. It suddenly ceased on or about August 8, a few cases having appeared in the surrounding villages just before, and it is now gone completely from this neighbourhood, though I hear that it is now prevalent in a town some twenty miles away on the other side of our mountains.

"My collector also found some *Laurines* the absence of which was rather puzzling to me. I am sending him off in another direction in a day or two. The mountains he botanised over he described as lofty, and covered with thick forest of immense trees. Bears occur there, a sure sign of virgin forest, as far as my experience goes in China.

"I have little more to add, as I have not been away lately on any interesting trips. I, however, find much to interest me in the mountains around: it is not everywhere you come across plants you have not seen before, almost every day. The Orchids are plentiful and rich in species.

"This place is isolated in the extreme, and it takes such a time to receive letters. As regards stores, they come after delays of months. I have nearly finished all my shoes, and there are new pairs, I hope, all along the way, but they do not seem to come.

"It is rather easy travelling about here, as mules are cheap and numerous. I have just had a tent made for trips. The savage villages in the mountains are too dirty to stay in, even if one always found these queer folk in the humour to take one in. What I mean by 'too dirty' is something awful, as I put up quite comfortably with the huts of the Chinese in Hupeh, which were comparatively clean.

"The Chinaman is of course superior to these Shans, Lolos, Miao-tzu, in energy and various other laudable qualities, but the Miao-tzu and true Lolos of the mountains have more pleasant manners in many ways—at least, I like their looks and way of talking.

"Does no geologist ever dream of investigating these regions? Yunnan is well known for its mineral wealth. It is easy enough now getting here from Hongkong by way of Tonking." *Kew Bulletin*, February and March, 1897.

FLORISTS' FLOWERS.

DAHLIAS AT MR. C. TURNER'S SLOUGH NURSERY.

"TURNER'S" was a household word among florists all over the country at one time, and if it be less so at the present day, it is because there are so many more persons engaged in the florists'-flower business, and not because the nursery has in the least degree deteriorated. The raising of Dahlias from seed, and the propagation of the plants in other ways, still

forms one of the specialties of the firm, and not less so now, than in bygone years. As the popularity of one kind of florists' flower wanes, another comes to the front to be, in its turn, probably relegated to the limbo of half or wholly forgotten plants.

The show variety of *Dahlia* is, in so far as southern growers are concerned, on the road thereto; but in spite of the smaller amount of interest taken in it, numbers of all the best varieties are still grown here, and a large trade done in the plants, chiefly with cultivators in the northern counties. The favourite section of the *Dahlia* at the present time in the south is the so-called "Cactus-flowered" varieties, the flower of these varieties being very lasting as well as ornamental when cut. Knowing that every good variety is afforded a fair trial at Slough, I recently visited the nurseries with a view to making a selection.

The Cactus Dahlias are accorded the greatest amount of space, being followed closely by the show and Pompon varieties; of the first named variety, many that are new, and under name as well as unnamed seedlings, were remarked in the trial beds. Among the yellows was Mrs. H. Turner, a very showy flower, not too large. It is a plant which throws flowers early as well as late in the season; but the mid-season flowers are apt to become too large, flat, and not to partake of the true Cactus shape.

Lady Penzance is a pretty yellow flower, good for cutting where short stems will suffice, but which has the disadvantage of not throwing up well, thus the blooms are partially hidden among the foliage. Of flowers of red and orange-scarlet shades, there are far too many. Fusilier is a free and good variety of full size, and of the true Cactus shape; *Gloriosa* grows tall, and has brilliant crimson, partially incurved flowers; Fantasy represents a dwarf form of the preceding, but with smaller flowers; Harmony is a reddish-bronzy flower exhibiting a pleasing combination of colours—an improvement on Countess of Gosford; Starfish is a perfect "Cactus variety" of an orange-scarlet colour, and every flower comes true—a decided acquisition—its height is 4 feet. Mrs. H. Cannell is of an orange-buff colour, and a good flower; Cycle is in colour ruby-red, grading off to a lighter hue at the tips of the florets, the flowers borne erect on a stout stalk; Endymion is a bright cerise-coloured flower with twisted florets; Iona of a terra-cotta hue; and Mrs. Beck is of a rich reddish salmon hue, and, like the preceding variety, it is free flowering. Charles Woodbridge is a new variety of a plum colour, a fine type of Cactus-shaped flower, and distinct; Cinderella is of the same class as the preceding, but of a deep shade of velvety purple; Delicat and Mrs. Wilson Noble are varieties of a salmon-pink tint, free flowering, and of moderate growth. Of dark varieties, Matchless, although a telling colour, is not a true Cactus; Harry Stredwick, one of this class, possesses flowers of a more perfect shape; and a variety of dwarf growth, with perfectly-shaped flowers of a crimson-maroon colour was found in a Slough seedling named Hyperion, the flowers of which are thrown well above the foliage. A good white Cactus *Dahlia* appears to be still lacking, the variety Mrs. A. Peart being of a creamy-white, the flowers of which are often misshapen; and Mrs. Francis Fell, although a free-bloomer, has slender flower-stalks, causing the flower to droop and show the reverse of the pinkish florets. It passes for a pure white, however, when cut with short stalks as set up for exhibition purposes.

For effect in the beds, the Pompon *Dahlia* with its numerous, small, erect flowers is perhaps the most effective. The best in this class are, whites, Lady Blanche and White Aster; orange-scarlet, Isabel; clear yellow, Whisper; deep crimson-maroon, Douglas; light orange scarlet, Phoebe.

The single-flowered Dahlias seem to be dropping out of cultivation, although some of the starry, or single-flowered Cactus ones, are useful for cutting, and last fairly well when taken in the newly-expanded state. H.

THE WEEK'S WORK.

PLANTS UNDER GLASS

By G. H. MAYCOCK, Gardener, Luton Hoe Park, Luton.

The Fernery.—With the approach of a season of greater moisture in the outer air, that of the fernery must necessarily undergo a change, and damping down,

and affording water to the plants must be lessened. One damping down, and that early in the day, when also the application of water to those plants that need it may be carried out. This lessening of moisture should not be carried so far as to make the air parched, or thrips and red spider will overrun the Ferns. In collections it is very difficult to meet the requirements of each plant, but something can be done by arranging together in groups those species that need similarity of treatment. Some species thrive beneath the shade of taller Ferns. If the house be a lean-to, the back wall may have fibry-peat and loam secured to its face by means of small-meshed fencing-wire, in which *Davallia*, *Nephrolepis*, *Nephrodium*, *Pteris tremula*, *Asplenium*, and others may be planted. Such walls afford a quantity of fronds for cutting, and they are useful adjuncts to the indoor garden. The *Todea Hymenophyllum*, and *filices* generally, should have a structure to themselves; and some of them thrive in the crevices found in some old stone-walls, and also do well in the ordinary Fern-case. The *Todea Hymenophyllum*, &c., should be kept continuously moist winter and summer, but not by syringing them overhead. The proper temperature of the warm fernery at the season is 55° by night, and 60° by day, but a few degrees more than these figures in mild weather doing no harm.

Centropogon Lucynia.—This showy plant does well at this season in the intermediate house if the growth is nearly completed. Old plants in baskets (see p. 75, in vol. xxi.), will have made shoots 2 to 3 feet long, which should now be tied out round the sides of the baskets at regular distances apart, a few supports being likewise afforded those in the centre of the plant.

Agatheae celestis.—Those plants which up to the present have stood in cold frames may now be placed in a house with a temperature of 50° at night, and 5° higher by day, when large quantities of the flowers will appear on them in a short space of time. *Agatheae celestis* should not be afforded manure-water, unless it should appear exhausted, when farmyard liquid manure will, if diluted, be of benefit.

Francoa Ramosa, or *Garland-flower*, is a pretty plant, useful for furnishing cut flowers in the spring and summer. Seedlings of it which were raised in the spring and pricked off into small pots, will be sufficiently rooted to repot into large 48's, in which they will flower in the spring of next year. A compost of loam three-quarters, and leaf-mould one-quarter, and enough silver-sand as will give porosity, will suit the needs of the plants. Being repotted at this date, the plants will winter safely if plunged to the rims in coal-ashes in a cold pit. The plants may also be propagated by division, potting these bits in small 48's.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Removing Root-suckers from Fruit-trees.—Wall-trees frequently produce root-suckers, and if the Dutch-hoe be used repeatedly to destroy seedling weeds, these young suckers are cut down by the tool, but they appear again more numerous very soon afterwards. Owing also to the fact that the top-growth of wall-trees is more restricted than is the case with standards and bush-trees, the disposition to produce root-suckers is increased. The present time is a good one to go carefully over such trees, and remove, by the aid of a spade and sharp knife, all the bunches of roots which have in the way stated formed on the main roots, afterwards replacing the soil and making it firm.

Fruit-tree Stocks worked during the present year should have all suckers coming out below the graft or bud rubbed off as soon as they appear. This applies to Apricots, Peaches, Plums, and Cherries, and the result will be that the flow of sap will be directed into the development of the scion. Neglect of this has resulted in many failures among young fruit-trees.

The Harvesting of Apples, Pears, Filberts, Walnuts, Quinces, and Medlars, should receive almost daily attention during the present month, the different varieties of Apples and Pears very quickly succeeding each other in order of ripening. The fruit should be put on the fruit-room shelves in the order in which they will become fit for use. When fruit readily parts from the spur on being lifted to horizontal position, it is fit for gathering. Medlars and Quinces may be left on the trees till the end of the month. Walnuts and Filberts should be gathered as soon as they come away freely from the trees. Gather

Filberts for pecking in jars with their husks when dry, and place the jars in a cool room or cellar out of the reach of mice, covering the mouths of the jars with a piece of slate, or a seed-pan of the same size. I may repeat once more that the greatest care should be exercised in the handling of all fruits, but especially Apples and Pears, or they will be certain not to keep well.

THE KITCHEN GARDEN.

By W. FORK, Gardener, Highclere Castle, Newbury.

Lettuce and Endive.—A good supply of salad during the winter months may be ensured by lifting a number of Lettuces and Endive from the open ground when about half grown. Remove them with balls of soil attached, and plant them from 9 inches to 1 foot apart in cold frames. If the work be carefully done, the plants will receive very little check, and soon form large plants that will keep in good condition much longer than those which may be lifted and stored in frames when full grown. The frame-lights should be removed as much as possible for the present, merely putting them on in the case of heavy rains, which, in conjunction with early frosts, may prove damaging to them. Plenty of air may be admitted at such times by tilting the lights at the back. Endive, now large enough for use on the open quarter, may be protected and blanched by gathering the leaves up and tying them firmly at the top whilst quite dry. This will blanch them perfectly, and prevent moisture from reaching the hearts of the plants. In the case of the small, curled varieties, blanching may be done by laying a roofing-tile over the plants for a few days.

Late Potatoes.—Take advantage of fine weather to proceed with the lifting of the late Potatoes. It is important that the tubers be dry before being stored away. If the tubers will not be required for consumption for a few months, there is no better plan than that of putting them into clamps on the ground. Put them in long, narrow ridges, about 4 feet wide at the bottom, and 2½ feet high. Cover well with dry straw or Fern, and place a good thickness of soil over this, taking care to leave sufficient openings along the ridge to carry off any moisture arising from sweating, but closing them with a bunch of straw.

Onions.—Summer-grown Onions should be got into their winter quarters. Any cool, dry place will be suitable, and a few degrees of frost will not hurt them in the least, provided they are dry. If plenty of shed-room be available, the bulbs may be laid thinly on shelves after being divested of the loose skin. Otherwise they may be tied into bunches or ropes, and hung up thickly to the rafters or walls. Onions should be examined frequently for decaying or growing bulbs. Thick-necked or imperfectly-finished bulbs should be kept by themselves for present use, long-keeping varieties being likewise stored separately for late consumption. Keep autumn-sown plants free from weeds, and on a dry day stir the soil with the Dutch-hoe. A dusting of fresh soot afforded occasionally is of great benefit to the Onion.

Kidney Beans.—These plants will now need protection from early frosts, and so prolong the season outdoors as much as possible. Growth even now is very slow, and a slight frost will quite stop the supply. Dwarf varieties may be protected somewhat by placing spare frames and lights over them; or hoops and mats placed over the rows will protect them on cold nights.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Vines.—In the earliest houses the Vines have become thoroughly ripened, and the work of cleansing and pruning them may soon be commenced. In cases where the wood may not be ripening so quickly as could be wished, it will be well to prune back the shoots to five or six eyes so that they are exposed to the sun. This shortening will also cause the back buds to swell up considerably; and if manure-water is abundant afford the inside borders a good soaking with same. Vines it is intended to start on November 1 should be pruned and got ready as soon as the leaves commence to fall, taking care not to prune back very closely, if the Vines are aged. Leave a good plump bud, even if it be at some distance from the rod, for a long spur is more tolerable than a worthless bunch of Grapes. The houses should be washed well with soft-soap and water, and if the Vines are free from bug, a good washing of Gishurst Compound with a little flowers-of-sulphur added will be all that is needed. Apply the liquid when warm, and rub it

into the bark with soft scrubbing-brushes. Remove old matting ties from the wires. Take clean away everything from the surface of the border, and if the top soil is at all spent, carefully point it over with a fork and rake off as much of it as can be done without injury to the roots. Then give a sprinkling of Vine-manure, or of finely crushed bones, and cover with a layer of good friable-loam to which has been added a little lime-rubble and soot. B at this firmly with a steel-fork, and cover with a layer of long stable-manure. The outside borders may be treated in the same way, making sure that the roots be kept near to the surface. A good watering with tepid-water will be all that remains to be done when closing the house.

Mid season Houses.—Trim off all lateral growths upon Vines from which the crop has just been removed, and then syringe them thoroughly with a mixture of soft soap and water. If the borders be in the least degree deficient in moisture afford them water abundantly, and throw the house wide open night and day. As these structures are often required for housing Chrysanthemums, the Vines may be pruned or half-pruned before these plants are brought in.

Later Houses containing ripe Grapes must not be kept too damp; at the same time the roots must be afforded sufficient moisture, or the Grapes will shrivel. If water be necessary, choose a nice bright morning, and do the work early, so that the house can get moderately dry before closing time. If the nights become cold and foggy, close the vineries at night, and open them as soon as the mist has cleared off in the morning. Remove decaying berries promptly, as one left in a bunch will soon spoil the whole bunch. If Muscats are lacking in colour, the foliage may be pushed back, to admit all sunlight possible. Keep a sharp look out for injury from mice.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Birtford, Dorking.

Up to the time of writing, very little fire-heat has been needed in any of the houses, but in October we must be prepared for cooler weather; sudden changes occur, and usually in the early morning hours, causing a drop in the heat of the houses, which the gardener is unable to guard against. On these occasions no application of water to the plants or damping down should be done till the proper degree of warmth has been reached. For the next few weeks the night temperatures may be as follows:—East India-house 65° to 70°, Cattleya and Mexican-house 60° to 65°, and the intermediate-house 60°; the higher temperatures being maintained only when the external air is near to about 45°. When banking up the fire, the dampers should be so arranged that there may be a fall of several degrees by the morning-hours. Such of the deciduous or semi-deciduous Dendrobiums mentioned in a former calendar, which are now being rested, will be quite safe in the greenhouse or other airy structure with a temperature at night of about 55°. As the weather gets colder, and the pseudo-bulbs ripen, a temperature of 50°, if the house be kept dry, will suit them. The cool or Odontoglossum-house may be kept at 50° to 55° while the weather continues mild, but when colder weather renders it necessary to use the heating-apparatus, the lower temperature named should not be exceeded. The Masdevallia-house should at all times be 2° or 3° warmer than the cool-house, and to prevent the black marks so often seen upon the leaves of these plants, the atmosphere should always be several degrees below saturation point. The external air being more cool and moist now than during the heat of summer, there is no need to damp down so often. From the present time a moderate amount of damping of the East Indian, Cattleya, Mexican, and intermediate-divisions morning and afternoon will suffice. In the cool-houses one thorough damping down in the morning will suffice, but after a bright sunny day, the floors may be sprinkled in the afternoon. It is important at this season to let the houses get comparatively dry during the middle hours of the day, doing this regularly having the effect of checking the development of spot on the foliage, and maturing the growths. Every house should be well ventilated when the weather is favourable for so doing. The top-lights of the East Indian-house may be opened to a moderate extent for a few hours in the middle of warm days; the Cattleya, Mexican, and intermediate-houses being also well ventilated whenever the external air is above 50°. Abundance of air must be given to the occupants of the cool-house when outside it is not lower than 45°. In the warmer divisions, a certain amount of discretion must be used in the matter of ventilation; it

being improper practice to admit large volumes of cool air into the house all at once, a better method being to slightly open the ventilators, increasing the amount of air admitted as the inside temperature rises.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Calceolarias.—During the next ten days the cuttings required for furnishing plants for next year's bedding should be taken. From many years' experience, I find that the cuttings are more easily struck at this time than earlier. After the heavy rains in the early part of September, the Calceolarias made free growth, and good cuttings should be readily obtainable in the form of strong growing points, rejecting those which have incipient flower-buds. The cuttings may be successfully rooted in a cold frame set on a hard bottom of coal ashes, on to which some rough leaf-soil to the depth of 3 inches is placed, and on this a layer of the same thickness of finely sifted, moderately light soil. Let the bed be made smooth, with a light slope from the back to the front of the frame, and make it firm. Over the mould some silver or clean river or sea-sand may be strewn to the depth of half an inch. Put in the cuttings by means of a rather blunt-ended dibber of ¼-inch in diameter. If dibbled in 3 inches apart, the cuttings will have sufficient space to grow till early spring, when they should be transplanted into other frames. Afford the bed one good application of water, and keep the frame close and shaded from bright sunshine for three weeks, that is, till roots have formed. Protection with mats or litter should be afforded to exclude frost during the winter. Cuttings of Gazanias and Antirrhinums are as readily struck in the same manner if inserted at this date.

Violas.—These are usually required for early blooming in the flower-beds, and as the plants are more floriferous and satisfactory if newly planted each year, either by being taken up and divided, and the younger of the rooted pieces selected for re-planting at this season, or by taking cuttings now, and rooting these in a cold frame, as recommended for the foregoing; or, if a frame be not available, then on a sheltered border. The smaller rooted bits of the old plants—but not the older portions of these plants—may also be pricked out on a border, and these will make good plants for transferring to the beds in the spring. They will, however, come in better for late than early flowering, that is, the bloom will come late and last through the summer months, if the precaution be taken to manure the ground they will occupy with well decayed and pulverised spent mushroom-bed dung, or that from old hot-beds, or even with leaf-mould.

Viols.—The plants have grown considerably since September set in, and both single and double-flowered varieties have formed good strong clumps, and flowers are now plentiful on many of the varieties. The double-flowered varieties may now be lifted from the open ground and planted in frames. The bed of soil on which they are planted should be laid on an unsinkable bottom, and it should consist of good loam and leaf-soil in the proportion of two-thirds of the former to one-third of the latter. The bed should be so made that the plants are almost touching the glass. A portion of the single varieties, if they have been conveniently planted for the purpose, may have frames placed over them later on, and protection afforded them in frosty weather.

Bedding-plants.—The whole of the Pelargoniums which have been struck in the open should be potted-up forthwith, and placed under glass. If any of the old plants are to be saved, these should be potted-up without delay, shortening the roots, but not the tops, and putting them into pots as small as will accommodate the roots, using as a potting soil sandy-loam. They should not receive any water for a week or two; but if the sun be bright, shading should be put over them for a few hours. Have protecting-material placed handy, so that beds of tender plants still in a presentable condition, or which it may be desirable to save, may be quickly covered in the event of frost occurring.

SPRING WHEAT IN THE UNITED STATES.

We learn from the Agricultural Department at Washington that the condition of spring Wheat (86'7), 54·5 points lower than in July, but 7·8 points higher than at the corresponding period last year, and 4·5 points higher than in the August average for the last ten years.

APPOINTMENTS FOR OCTOBER.

SATURDAY,	Oct. 2	Société Française d'Horticulture, London.
THURSDAY,	Oct. 7	Isle of Wight Horticultural Society, Meeting.
		Ayrshire Gardeners' Society, Meeting.
TUESDAY,	Oct. 13	Royal Horticultural Society's Committee.
		National Chrysanthemum Society's Show.
TUESDAY,	Oct. 26	Annual Dinner of the United Horticultural Provident and Benefit Institution.
		Royal Horticultural Society's Committee.

SALES FOR THE ENSUING WEEK.

MONDAY,	Oct. 4	Dutch Bulbs, at Protheroe & Morris' Rooms.
		Unreserved clearance sale of Stove and Greenhouse plants at the Gardens, Cowdray Park, Midhurst, by Protheroe & Morris.
		Dutch Bulbs, at Stevens' Rooms.
		Dutch Bulbs, at Protheroe & Morris' Rooms.
		Unreserved clearance sale of Plants, Lights, and utensils at The Vine Nursery, Downs Road, Clapton, by Protheroe & Morris.
TUESDAY,	Oct. 5	Clearance sale of well-grown Eucalyptus, Palma, and other stock at The Saxe Weimar Nursery, St. Edward's Road, Southsea, by order of Mr. T. J. Short, by Protheroe & Morris.
		Dutch Bulbs, Palms, Azaleas, and other plants from Ghent at Stevens' Rooms.
		Dutch Bulbs, Azaleas, Camellias, Roses, Perennial Plants, &c. at Messrs. Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 6	Unreserved two days' sale of Nursery Stock at The Tunbridge Wells Nurseries, Tunbridge Wells, by order of Messrs. T. Cripps & Sons, by Protheroe & Morris (two days).
		Unreserved sale of imported Orchids, Dutch Bulbs, Lilies, &c. at Mr. Stevens' Rooms.
THURSDAY,	Oct. 7	Dutch Bulbs, Azaleas, Camellias, Perennial Plants, Roses, &c., by Protheroe & Morris.
FRIDAY,	Oct. 8	Dutch Bulbs, and imported and established Orchids at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 9	Dutch Bulbs at Stevens' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—53° 4'.

ACTUAL TEMPERATURES:—

LONDON.—September 29: Max., 70°; Min., 54°.
PROVINCES.—September 29: Max., 60°, at York; Min., 50° at Sunning Head.

The Fruit Show.

For the fourth year in succession the Royal Horticultural Society has opened an exhibition of British-grown fruits at the Crystal Palace. No one doubts the influence that such a display exercises upon British fruit-cultivation. Its effect is to demonstrate that in our climate it is possible to produce hardy fruits, especially Apples, as fine or finer than those from any other part of the world. It is a grand advertisement, and one that is needed, for if horticulturists know well enough what first-rate English-grown fruit is, there are numbers of the populace who do not. It is advisable, nay, essential, that they should do so, and nothing can effect this but the repeated exhibition of fruit in the finest condition it can be obtained. Such a show also encourages a desirable emulation amongst gardeners, and tends to raise the average standard of excellence in culture.

We regard it as a happy circumstance, therefore, that in 1894 the Royal Horticultural Society decided to endeavour to revive the Annual Crystal Palace Fruit Show that had been allowed to lapse. This was done on condition that those interested in the matter would subscribe £100 towards the prize fund, and for the fourth time this condition has been met. The speeches of the Chairman of the Crystal Palace Company, and of the President of the Royal Horticultural Society at the luncheon were satisfactory, inasmuch as they indicated a general and earnest desire to continue the show from year to year. Nothing has been wanting on the part of the Crystal Palace Company to

make the show a success, and the Society very fully appreciates the consideration that has been shown. Notwithstanding certain rumours to the contrary, we gather from the chairman's speech that the Crystal Palace is not likely to be sold to this or to that body at present, and for an indefinite time the finest place for such a purpose in the metropolis will be available for the annual fruit show. The present exhibition is satisfactory to all concerned, and a pleasant surprise in such a season as 1897. The moral seems to be that, let the season be never so bad, there will always be sufficient good hardy fruits to make a first-class show.

The lecture delivered on the first day by Mr. BUNYARD was upon "Progress in Fruit-cultivation during QUEEN VICTORIA'S REIGN," and we cannot do more for the moment than briefly refer to some of the subjects then touched upon. Mr. BUNYARD invited his audience to imagine a typical garden of 1837. He explained the system of fruit-culture then practised, and enumerated the varieties with which such a garden would be furnished. The leading fruit-tree growers of that time were mentioned, and the introduction of continental novelties and methods referred to. Mr. BUNYARD spoke of the grand work done by the late THOMAS RIVERS, and alluded to the increase of fruit culture under glass.

In such a review of the development in fruit cultivation, considerable prominence has necessarily to be given to the work done at Chiswick under Mr. BARRON, especially the first Apple Conference, an event that was the means of effecting incalculable good. A tribute was paid to other workers in the cause of popularising and systematising fruit-culture in this country, some of them by their pens, others by actual practice, and the excellence of the work done by the Fruit Committee of the Royal Horticultural Society was acknowledged. Carefully-compiled lists of varieties of fruits known in 1837, and still cultivated, and a list of fruits certificated by the Royal Horticultural Society during the sixty years, are included as appendices to the paper. Interesting notes upon the introduction of some of the best fruits; and a review of the Pomological literature during the present reign were given and a list added of the best fruits in 1841, being a reprint from the *Gardeners' Chronicle* of that date.

The New House at Kew.

In vol. xvii. (N.S.), p. 636 (1882), and pp. 16 and 19, vol. xi., 1892, 3rd S., we published reproductions of the original design by DECEMUS BURTON for the Temperate-house at Kew, only a portion of which was completed in 1862, namely, the central block and the two octagons. The building of the two wings was postponed presumably through lack of funds. One of these wings, the south, has this year been built, thanks largely to the exertions of the Right Hon. J. CHAMBERLAIN. In its main features, the new house is in accordance with Mr. BURTON'S design, the only deviation being in the use of lighter material and more glass, an improvement on the original from the cultivator's point of view. The house is a handsome quadrangular structure, with a high central span land lean-to sides. It is 38 feet high, 112½ feet long, and 62½ feet wide. Except the paths, the whole interior is laid out in beds, with the hot-water pipes placed in a grating-covered trench in the central path and round the outside walls. These beds, which are from 4 feet to 5 feet deep, are filled with from 18 inches to 2 feet of drainage, through which agricultural drains run, and from 2½ feet to 3 feet of soil. This is chiefly pasture-loam, with which river-sand and lime-rubbish has been freely mixed. Altogether

about 1000 loads of material have been placed in the beds. At the south end, some large masses of rock have been arranged for the accommodation of Agaves, Cacti, Euphorbias, and such-like plants.

This house is to be devoted to plants requiring an intermediate temperature, and a liberal allowance of sunlight. The minimum winter temperature will be about 50°.

Planting operations began in April, and the house was opened to the public on July 23. The growth of the plants generally has been surprisingly vigorous, very few indeed of the 500 species planted having failed. There can be no doubt that the bed system is preferable to pot-culture for plants in large houses, that is if rapidity of growth with luxuriance are desirable. This has been abundantly shown already by the growth made by plants previously cultivated in pots, some of them having already grown almost out of recognition. Of course, this probably means a short life and a merry one for some things which, when kept in pots, grow with less vigour and last much longer.

As has been already stated, about 500 species of plants have been planted in this house. It may be worth while to set down the names of some of the most interesting of these. Economic plants are largely represented, and it is surprising how many of these are growing with a vigour hitherto unknown when they were grown in pots in the smaller houses. The Mango is fruiting in this house for the first time at Kew. The Kaki (*Diospyros Kaki*) is ripening its orange-like fruits, and the Guavas (*Psidium Cattleianum* and *P. littoralis*) bear crops such as have not been seen at Kew before. Cottons (*Gossypium*) in variety are represented by healthy bushes 5 or 6 feet high, bearing plenty of flowers and pods; the Caricas (Pawpaws), *Passiflora edulis* and Tree Tomato (*Cyphomandra*) are also fruiting freely. The last-named plant has grown in three months from 2 feet in height to 9 feet, and its handsome cordate leaves are 16 inches across. Other interesting and important economic plants in this house are:—Cinchonas, Nepheliums (Litchi and Longan), *Persea gratissima*, Shaddock, Lemon and others of the Orange family, *Musa Cavendishii*, and others; *Lucuma deliciosa*, Mexican Apple (*Casimiroa edulis*), Sugar-cane, Uva-grass, Pomegranate, Kafir Plum, Dragon's-blood (*Dracæna*), Frangipani, Star-apple, Sea-side Grape (*Coccoloba unifera*), &c. In all, there are about fifty of the most important economic plants represented.

The selection of plants that deserve prominence at Kew is equally representative. We noted *Greyia*, *Oldenburgia*, *Gardenia Thunbergii*, *Bauhinia Galpini*, *Erythrina tomentosa*, *E. caffra* and *E. Humei*, *Burchellia capensis*, *Mackaya*, *Alberta*, *Strelitzias*, *Leucodendron* (Silver-tree), *Calodendron*, *Protea*, &c., among the African denizens. Many of these have either flowered already, or promise to do so shortly. *Erythrina tomentosa* is an extraordinary plant, with a wiry stem 4 feet high, and a head of grey-green trifoliate leaves, each leaflet measuring over a foot in width. *Malhania erythroxylon*, an interesting Sterculiad peculiar to St. Helena; *Juania australis*, a Palm found only in Juan Fernandez; *Benanthera coccinea* the scendant Chinese Orchid; *Sophora chrysophylla*, from the Sandwich Islands; and *Ipomoea Wolcottiana*, a tree-like species from Mexico, are rarities which find a congenial home in this house. *Hibiscus Manihot* is a plant which has completely outgrown its botanical character

since it was placed in this house, its leaves being 18 inches across, and its flowers enormous yellow cups. A figure of a variety of *H. Manihot* will appear shortly in these pages. A select dozen species of *Eucalyptus* form a feature along the side-beds, whilst through

Bull's-horn *Acacias*, *Calliandra*, *Cacti*, *Puyas*, *Gustavias*, *Bougainvilleas*, *Coccolobas*, *Dasy-lirions*, *Yuccas* and various *Palms* representing the flora of Mexico and the West. The collection is one that should prove of considerable value horticulturally and botanically. The

such plants as *Hymenocallis*, *Ornithoglossum*, *Begonias*, *Streptocarpus*, *Browallias*, *Chlorophytums*, and an elegant little *Sugar-cane* known as the Japanese variety.

It is intended to proceed at once with the erection of the house on the north side of the



FIG. 71.—A RASPBERRY-BLACKBERRY HYBRID: IN COLOUR PURPLISH-BLACK, WITH A SILVERY BLOOM. (SEE P. 236.)

the middle run two rows of tall plants of *Cocos plumosa*; these will no doubt form a fine feature in a year or two; *Bauhinias*, *Melastomads*, *Gordonia anomala*, *Lagerstrœmias*, *Poinciana regia*, *Roupalas*, *Aralias*, *Musæ*, *Bamboos*, and *Ficuses* are choice plants from Eastern regions; *Barnadesia*, *Blakea*, *Laeculia gratissima*, *Pogonopus caracasana*,

climbers are equally choice, among them being *Aristolochias*, *Beaumontias*, *Passifloras*, *Solan-dras*, *Cephalandras*, *Sicana odorifera*, *Lonicera Hildebrandi*, *Momordica cochin-chinensis*, &c. Among the rocks at the south end are various *Aloes*, *Agaves*, *Euphorbias*, *Cereus giganteus*, large specimen of *Opuntias*, *Sansevierias*, *Pro-teas*, *Crassulas*, &c. The undergrowth consists of

block, a vote on account for the purpose having been already taken. This house will be devoted to the cultivation of such plants as require only protection from severe weather, such as *Himalayan Rhododendrons*, *Camellias*, &c. When this addition has been finished, the whole block or range will be without an equal. It will, in fact, be worthy of Kew.

A RASPBERRY-BLACKBERRY.—The efforts of hybridists in this country and the United States of America have frequently been directed to crossing *Rubus Idæus*, the Raspberry, with *R. fruticosus*, the Blackberry, and *R. trivialis*, the American Dewberry, the prominent idea of the cross-breeder being the obtaining of a plant which, while affording a longer succession of fruit than the Raspberry, and in that respect resembling the Blackberry, would be superior to the latter in the matter of flavour. Messrs. JAMES VEITCH & SONS (Limited) of the Royal Exotic Nursery, Chelsea, showed at the Royal Horticultural Society's meeting at the Drill Hall, James Street, Westminster, on Sept. 17, a quantity of fruiting-stems of a cross which they had obtained at their Langley Nurseries between Raspberry Belle de Fontenay and the common Blackberry, the Raspberry being the seed-parent. The fruits of a purplish-black colour, with a grey bloom on them, were of the size shown in our illustration (fig. 71, p. 235), and very abundantly produced.

APPLE CROP IN THE UNITED STATES.—According to the very latest trustworthy reports, there are very few extensive Apple-producing States whose reported condition indicate more than one-half or three-fourths of a normal crop, and generally the indication is towards the lower rather than the higher average. New York reporting 58, Pennsylvania 52, Ohio 35, Michigan 38, and Indiana 56 per cent. The most favourable reports, by comparison with the foregoing, are Virginia 65, Tennessee 68, Kentucky 67, Illinois 85, Iowa 78, Missouri 76 per cent. Not only is the yield much below the average, but except in a few States, the quality of the fruit is decidedly inferior.

ORLEANS.—A horticultural exhibition takes place at this city on the days 6th, 7th, 8th, 9th, and 10th of November next, the exhibits consisting of Chrysanthemums, fruit, wine, and liqueurs. The schedule is obtainable from the Horticultural Society of Orleans and Loiret.

IMPORT DUTY ON FRUIT IN THE UNITED STATES OF AMERICA.—Uncle Sam has placed the duty on fruits as follows:—Apples, Peaches, Quinces, Cherries, Plums, and Pears, green or ripe, 25 cents per bushel; Apples, Peaches, Pears, and edible fruits, including berries, when dried, desiccated evaporated or prepared in any manner, not specially provided in this Act, 2 cents per pound; berries, edible, in their natural condition, 1 cent per quart. Currants 2 cents a pound; Grapes 20 cents per cubic foot of capacity; Plums 2 cents a pound.

CANADIAN TOMATOS.—From the English market reports it would appear that this fruit can be exported profitably in cold storage. *The Fruit Grower*, London, dated July 22, quotes Guernsey Tomatos at from 6 to 10 cents a pound, and speaks of the supply as being abundant. When we consider that this fruit often sells as low as $\frac{1}{2}$ cent per pound in this country, it is evident that we are encouraged to attempt its export.

THE EUROPEAN FRUIT CROP is estimated as follows:—Apples, England, fourth crop, will require large importations; France, light crop in the south, fair crop in the north, can export some; Belgium, third crop; Holland, fair crop; Germany, fair; Italy, good. Pears: England, worst crop for many years; France, good crop of late kinds; Germany, good crop of ordinary fruit.

THE BURBANK PLUM is a magnificent success in the Niagara district so far as growth of tree and productiveness is concerned. Mr. L. L. HAGAR of Grimsby, has some young trees breaking to the ground with ropes of this beautiful Japan variety. Mr. HAGAR believes that it will prove an excellent acquisition. *Extracted from No. IX of the Canadian Horticulturist.*

THE DUTCH NATIONAL CHRYSANTHEMUM SOCIETY, as the secretary, M. J. K. BUDDE, informs us, will hold its first exhibition of these flowers from November 12 to 16 next, in the King's Hall of "Natura Artis Magistra," at Amsterdam. The schedule is divided into three sections, viz., one for

nurserymen, another for amateurs, and a third for amateurs who do not employ a gardener. For the nineteen numbers a sum of about £100 prize-money is set apart. As there is a great rivalry among Chrysanthemum-cultivators, it is thought that this show will be worth seeing.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The first meeting of the sixth session of this society was held at 25, Westgate Road, on Tuesday, September 14. The Chairman, Mr. J. BULLOCK read a very interesting paper on "Filmy Ferns," and was followed by a discussion in which many of the members took part.

SHIRLEY AND SURROUNDING DISTRICTS GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.—The monthly meeting of the above Society was held at the Parish Room, Shirley, Southampton, on Monday, Sept. 20, Mr. B. LADHAMS, F.R.H.S., presiding over a good attendance of the members. There was an exhibition of Vegetables, and a discussion on the exhibits. There was also a good display of cut-blossoms of Dahlias, and herbaceous plants; also of fruit and Tomatos. The Annual Excursion of the members will be on October 2, to the Crystal Palace, when it is hoped there will be a good number of the members present.

SWEET-PEA SHOWS.—As yet, a special show of Sweet Peas is unknown in this country, but there is no reason that we know of why we should not have them. The flowers are very pretty and fragrant, and their development is considerably influenced by treatment. We read of a fine annual show of this sort being held in August at Springfield, Massachusetts, the majority of exhibitors being amateurs. We read of the Sweet Peas shown by Mr. ELDBRED being "superb," of "wonderful size," his fifty of Aurora "the wonder of all beholders." Although home-raised varieties were among the winning collections, these contained likewise many of ECKFORD'S. So that at the least, in the matter of Sweet Peas, we are not played out as yet.

THE ULSTER HORTICULTURAL SOCIETY will hold its exhibition of Chrysanthemums on Nov. 16 and 17, at Belfast, and, judging from the schedule now to hand, the event should be of first-rate importance. One hundred pounds and three Medals are offered in one class, which is to commemorate the Diamond Jubilee Year, and calls for forty-eight Japanese blooms in at least thirty-six varieties, open to the United Kingdom, exclusive of nurserymen. A 1st prize of £40 and a Gold Medal, with six other prizes, can hardly fail to make this competition a memorable one. Apart from the class noticed, the schedule is very similar to that of most first-class societies, and includes sections for amateurs who keep gardeners, and for amateurs who do not; also for nurserymen, farmers and cottagers respectively. The section devoted to plants seems very complete. Fruit and other miscellaneous produce is solicited.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—On the occasion of the meeting of the Floral Committee of this Society on Sept. 11, the committee awarded First-class Certificates to Messrs. C. Ottolander & Son of Apeldoorn, for *Abies concolor fastigiata*, *Aucuba japonica longifolia dentata*, and *Pseudotsuga Douglasii glauca pendula*; to Mr. C. G. van Tubergen, Jun., of Haarlem, for Cactus Dahlia Harry Stredwick; to Messrs. J. W. Wigman & Son of Zutphen, for Cactus Dahlias Harry Stredwick and Insignis; to Mr. K. Wezenburg of Hazerswoude, for *Daphne Laureola fol. atropurpureis* and *Physalis Francheti*; to Mr. A. P. Hendriksen of Zeist, for *Pennisetum macrurum*; and to Mr. D. Keuchenius of Hoogeveen, for *Rosa Gloire de Deventer*. Certificates of Merit were awarded to Mr. Jac. P. R. Galesloot of Amsterdam, for *Callistephus sinensis aurea*; to Mr. C. H. B. Alsche of Velp, for *Medeola asparagoides*; to Mr. G. T. Hemerik of Leiden, for Cactus Dahlia Beatrice, and Dahlia Mahala Sheriff; to Mr. C. G. van Tubergen, Jun., of Haarlem, for Cactus Dahlias Beatrice and Miss Webster; to Mr. W. van Veen of Leiden, for Cactus

Dahlia Beatrice; and to Messrs. J. W. Wigman & Son of Zutphen, for Cactus Dahlias Miss Webb, Crimson King, Green's Gem, Jessie, Mrs. Allhu and Princess Ena. Certificates of Merit were further awarded to Messrs. Sluis Brothers of Enkhuizen, Beans Hollandsche White Giant; and to Mr. Wulfscbe of Zwijndrecht, for a collection of Tom in fourteen varieties. H. C. ZWART, Secretary.

THE ANNUAL DINNER of the United Horticultural Provident and Benefit Society has been fixed for Tuesday, October 12. It will take place in the Holborn Restaurant, and Mr. H. B. MAY, of the Edmonton Nurseries, will take the chair.

CALIFORNIAN ORANGES.—The American liner *St. Paul*, which arrived at Southampton on Wednesday, Sept. 22, brought 4403 packages of California fruit, consigned to Messrs. GARCIA, JACOBS & Co. Covent Garden. The *St. Paul* docked at 10 o'clock in the morning, the fruit was discharged, loaded in railway-vans, forwarded to London, and delivered at Covent Garden Market by 7 o'clock in the evening, nine hours after the steamer docked at Southampton and seven days four hours after leaving New York. The fruit reached market in splendid condition, and all of it was sold before 1 o'clock yesterday afternoon. *Morning Leader*, September 24.

DUNDEE JAM TRADE.—In consequence of a shortage in the Scottish fruit-crop, Dundee jam manufacturers have had to resort largely to the Continent for their supplies. The changeable nature of the season wrought serious havoc with the fruit trade, severe frosts in the latter end of May doing much mischief. Apart from Apples and Pears, which have also been imported in increased quantities, there have been conveyed direct to Dundee from the Continent up to the present time, 70 tons of Gooseberries, 50 tons of Raspberries and Strawberries, 60 tons of Currants, 45 tons of Plums, and 500 baskets of Cherries. Up to the same date last year the quantities were 18 tons of Gooseberries, 15 cwt. of Raspberries and Strawberries, 10 tons of Currants, 2 tons of Plums, and 127 baskets of Cherries. A considerable portion of the Dundee jam-manufacturers' supplies landed at Leith and Grangemouth.

FLOWERING OF AGAVE AMERICANA.—There are two plants of this species of Agave now in flower in the gardens of the Right Hon. Lord FIELD, Bakeham, Englefield Green, Egham. Each spike is 22 feet high, and they have been growing since February last. Mr. WREN, Lord FIELD'S gardener, will be pleased to show the plants to anyone who is desirous of seeing them.

THE EPIDEMIC OF TYPHOID AT MAIDSTONE.—Messrs. GEORGE BUNYARD & Co. desire us to state that their nurseries are 2 miles from the town, and in no way connected with it by drainage or water supply. Visitors should travel by the London, Chatham & Dover line to Barming station, which is in the nursery.

SERIOUS ACCIDENT TO MR. WILL TAYLER.—When out driving on Saturday last, September 19, Mr. WILL TAYLER, the well-known fruit-tree Rose-grower, Osborne Nursery, Hampton, was thrown from his trap, and received severe injuries to the head, rendering him insensible for some time. His condition is extremely serious, his many friends will be glad to know that strong hopes are entertained of his ultimate recovery.

PUBLICATIONS RECEIVED.—*Journal of the Japanese Horticultural Society*, April, 1897 (Tokio). *The Water-Garden*, by WILLIAM TRICKER (New York: A. T. DE LA MARE Printing and Publishing Co.). Treating of ponds, adapting natural stream planting, seed-saving, propagation, building aqueducts, with cultural directions for all ornamental aquatics.—*The Journal of the Board of Agriculture*, September, 1897. (Loughton & Co., 1, Essex Street, Strand, W.C.) Price 1s. Excellent illustrated article on injurious insects, viz., Asparagus-beetle, Pear Apple-blossom Weevil, The Y. Moth, damaging Clover, Peas, Rape, Turnips, and Cabbage.

blight of Gooseberry (*Microsphaera groenlandica*) is also described, and the preventive remedies indicated. The number contains much interesting matter on foreign and colonial agriculture, &c.—*The Botanical Magazine of Japan* for August, 1897, No. 126, vol. xv. (Tokyo).—*Tropical Agriculturist* (Colombo), A. M. & J. FENARSON.—*Queensland Agricultural Journal*

maximum, No. 1, 2nd yearly volume (G. SCHMIDT: Berlin, S.W., 46).—*Canadian Horticulturist*, No. ix., vol. 20.—*Mosses of the Azores and of Madeira*, by J. CARDOT (from the eighth Annual Report of the Missouri Botanical Garden).—*Lindenia*, Part LXXVIII, July, 1897.—*The Orchid Review*, September, 1897. No. 57. Vol. 5.—*Botanischer Jahrbücher für*

PLANT PORTRAITS.

- FRITILLARIA WALDENWII*, *The Garden*, September 25, 1897.
IRIS LEICHLINI, *The Garden*, September 18, 1897.
OXALIS ENNEAPHYLLA, *The Garden*, September 11, 1897.
PEONIA LUTEA, *Jardin*, August.
PEAR, LATE NINOVE (Tardive de Ninove), *Bulletin d'Arboriculture*, &c., June.
PENTSTEMON BARBATUS, *Mechanics' Monthly*, August.
PHYSALIS FRANCHETII, *Masters, Revue Horticole*, August 16.
POTHOS AUREA, *La Semaine Horticole*, No. 33, Sept. 1897.
PRUNUS HATVE DE BUHL.—A new variety of Plum, ripe in the middle of August; fruit in shape roundish oval, large; pulp yellowish-green, of good vinous flavour; excellent cropper, and the fruits hang on the tree some time after being fully ripe. The bloom will withstand 3° Cent of frost without injury. A table-fruit. *La Semaine Horticole*, September 25, 1897.
RHODODENDRON MRS. THURSTON-DYER, *The Garden*, August 7.
ROSE SUSANNE-MARIE RODONAGHI, *The Garden* for August 21, 1897.
SOLANUM SEAFORTHIANUM, *Revue Horticole*, September 16, 1897.
STRAWBERRY PERFECTION (Veitch), *Bulletin d'Arboriculture, de Floriculture*, &c., 7th series, vol. i., No. 6, September 1, 1897.
TROPEOLUM X LEICHLINI, *Revue Horticole*, September 1, 1897.
UTRICULARIA LATIFOLIA, *The Garden*, August 31, 1897.
VERONICA KLITICA, *Journal of Horticulture*, September 3 1897.

SPIRÆA MILLEFOLIUM.

THIS may not be one of the most attractive of the Spiræas, but it is undoubtedly one of the most remarkable and interesting species belonging to that extensive genus (fig. 72). The flowers are produced in a terminal, compound raceme, 5 or 6 inches high, and each flower is about half an inch across and white. The striking character of the shrub is not so much due to flowers as to the foliage. The leaves are 3 inches long, bipinnate, and resemble very much in their minute sub-division those of the Milfoil of our waysides. The upper side of the leaf is greyish-green and glabrous, but beneath is covered with a dark-coloured tomentum, and the petioles, midribs, as well as the whole of the young wood, are covered with a very viscid gum. According to Nicholson's *Dictionary of Gardening*, this Spiræa was introduced from California in 1880, and is a low evergreen shrub. At Kew, it is a bush 4 to 5 feet high, with erect branches, and although it is never without a few leaves even in midwinter, they are then confined to the extreme tips of the shoots. Coming from California, it requires as much sunlight as is possible in our climate, but it should be given a soil of only moderate richness, for a too vigorous and succulent growth is apt to be injured by frost in winter. W. J. B.

HOME CORRESPONDENCE.

LADY HUTT VINE.—Notwithstanding the statements of your correspondent "A. D." on p. 204, I greatly doubt if the fruit of this variety will ever become popular, owing chiefly to the greenish hue of the berries to which he alludes. I have the Vine as grown on its own roots, and inarched on a Lady Downes' Seedling, and in neither case was it satisfactory, the berries being small, although the bunches were large, was the flavour not good. These Vines were growing in inside borders with access to a well-made border outside. In the same vinery there grew side by side with Lady Hutt a Vine of Appley Towers, which was everything that one could desire, being large in berry and bunch, and a heavy cropper. The fruit was often exhibited at important horticultural shows, and always obtained 1st prizes. This Vine of Appley Towers was inarched on another of Lady Downes', and was pruned on the spur method; although I, like Mr. Bowerman, have an idea that the fruit would be better if taken from long rods. It is one of the best varieties for hanging till late in the season. H. T. M.

CAULIFLOWERS FORMING HEADS A SECOND TIME.—It is a common thing for Veitch's Extra Early Forcing Cauliflower to throw out sprouts from the side; and the same kind of second crop has occurred in my garden with the Walcheren, which had sprouts 1 inch in diameter at the base, and heads as large as an ordinary tea saucer. We obtain a useful crop of small Cabbages after the first cutting, and why not Cauliflowers? Only let the land be in good heart,



FIG. 72.—SPIRÆA MILLEFOLIUM: FLOWERS WHITE.

July, 1897, vol. i., part 1. (Brisbane: EDMUND GARGOY, Government Printer.)—*The Agricultural Journal* (Cape of Good Hope), August 19, 1897.—*Botanische Zeitung*, Heft ix., September 16.—*Botanische Centralblatt*, Band lxxi., Nos. 12 and 13.—*Die Natürlichen Pflanzenfamilien*, No. 159, Sphaerales and Laboulbemiæ, by G. LINDAU.—*Die Gartenwelt*, with supplementary coloured plate of Chrysanthemum

Systematik Pflanzengeschichte und Pflanzengeographie, vol. xxiii., No. V., and vol. xxiv., No. II.—*Agricultural Gazette of New South Wales* for July. Articles on Useful Australian Plants, giving vernacular, botanical, and aboriginal names; on the Sheep Fluke, Orchard notes for August, Vegetable and Flower Culture, besides much that is more peculiarly agricultural in its nature.

and the planting done early, and not too close, to reap the best results. *A. Smith, Harewood House Gardens, Hendon, N.W.* [We have several communications from gardeners in various parts of the country to the same effect. ED.]

HAMPTON COURT GARDENS.—Oliver Wendell Holmes, says that:—

"Little of all we value here,
Wakes on the morn of its hundredth year
Without both feeling and looking queer!"

The distinguished author makes exception, however, in the interests of a tree and a truth. The famous Vine here allows that he was right. In its hundredth and twenty-ninth year it shows no decay. At the present time it bears a crop of no fewer than 1,200 bunches of Black Hamburgh Grapes—about two-thirds having been removed in the thinning process. Probably, the Vine is the oldest in existence under cultivation. All its fruit is forwarded to the Royal Household via Windsor, and the last bunches will not find their way to the Royal table until about December. What is called the Jubilee Bed here is a splendid design, and has been worked out with great taste and skill by the Garden Superintendent, Mr. Gardiner. It is one of the largest oblong beds just opposite the Tennis Court. The groundwork consists of *Herniaria glabra*, and in the centre is a large diamond (indicative of the Diamond Jubilee); the centre consisting of *Echeveria Peacocki*, and is surrounded, to complete the diamond, with a broad margin of red *Alternanthera*. At either end is a large crown worked out with red and yellow *Alternantheras*; and at the sides, in red, are the monographs of the Queen, the Duke of York, and Prince Edward of York. *J. B.*

EARWIGS.—If Mr. Aggett will lay two boards on the ground, or sloping against a rest, with a small space between them, he will find that he can catch thousands, and may practically exterminate his earwigs. In a similar way woodlice may be caught very easily. In the Cactus-house, my foreman, Mr. Lamb, found that by laying pieces of bark together, large numbers were secured. *R. J. Lynch.*

—In reply to your enquiry in reference to my note in last week's issue, the earwigs were not troublesome, and did not touch the plants after the watering was discontinued, and my experience is, that the critical time is when they are put out, and until the growth becomes somewhat rank, when they leave them strictly alone. *W. H. A.*

EXPERIENCES WITH HORTICULTURAL BOILERS.—Of these my experience embraces only three kinds, namely, the upright tubular, the Cornish-Trentham, and the saddle. My first experience was with an upright tubular, which required a specially prepared stoke-hole, having a top platform to hold a store of fuel from which the boiler was fed, the ashes being withdrawn from the ash-pit at a lower level. Two of these boilers were fixed near their work, having a long under-ground flue to convey the smoke to an upright chimney-stack. These went on very well for a number of years, the underground flue, however, giving me a good deal of trouble. The Trentham-Cornish boiler about this time made its appearance, and was hailed at the time as presenting a panacea for the boiler difficulties. I got two 7 feet long, and had them placed side by side in a capacious stoke-hole, just under the chimney-stack; did away with the old underground flue, building in its stead a tunnel sufficiently large in which to place a flow and return-pipe, and in which a man can pass comfortably along to examine and repair those pipes at any time, should they require it. All the houses right and left are served from off these mains in the tunnel. By this arrangement we secured a far better draught for the boilers, and the flow and return-pipes follow the line along which previously the smoke used to pass. This arrangement worked very well until we were overtaken by a series of wet years—those years which played havoc with many tenant-farmers, and killed many of the finer feeding grames in the pastures. The water rose in our stoke-holes, necessitating almost constant pumping; and this was rendered all the more necessary on account of the retiring flue belonging to the Trentham boiler passing along the bottom or floor-level of the stoke-hole. These boilers, having worked for some considerable length of time, began to show signs of decay, and I therefore took an early opportunity to take them out, and raise the floor of the stoke-hole 3 feet, and since doing that we have had no more water rising through the bottom. Being desirous of obtaining a boiler more simple in its construction than the Trentham, and equally powerful,

I called in a local firm. They gave me a 7-foot saddle-boiler, with four crossed Galloway tubes at the far end, two flow-pipes fixed on the top instead of one only as is generally put. Finding with the Trentham boilers always great difficulty in getting at the far end to clean them out, I determined to obviate this in the setting of my new saddles, and this was rendered all the more necessary on account of the Galloway tubes. To this end, therefore, instead of fixing the ends of the boilers both up against the wall of the stoke-hole in the usual way, I had them set 4 feet away from it, thus leaving a passage all round behind, fixing at the back end of each boiler a heavy furnace-door lined with a substantial fire-brick slab; this enabled us easily and thoroughly to clean out the far end, which could but imperfectly be done from the front. These boilers are furnished with "sludge" doors, by which they can readily be cleaned out. I have preserved the furnace-door or mouthpiece of the Trentham boilers, which I thought were good ones. The ash-pits of these boilers are all made hollow and water-tight, thus able to hold water, the object of this being to prevent the destruction of the fire-bars, which had been, but which now seldom occurs, a constant source of expense. All our other boilers and stokeholes have in turn been treated in a similar manner. Fortunately the stokeholes had been made originally very roomy, and all of them are well ventilated. The entrance to our largest stokehole is by an inclined tunnel, being much safer than by a flight of steep steps. I am not aware that anyone has tried this manner of setting a boiler, though I have shown it to many gardeners who have called here. *W. Miller, Combe Abbey Gardens.*

BUSH BOUGAINVILLEAS.—Does the growing of *Bougainvillea glabra* in hard spurred bush-form in pots, and in a cool temperature, materially tend to deepen the colour of the bracts? There are two large sturdy bush-plants in pots at Hackwood Park in fine bloom treated as mentioned, and when I saw them the other day I could but remark how exceedingly the bract colour resembled that seen on Mr. Cypher's fine plant exhibited at Shrewsbury, which he has named *Cypheri*. Another person had previously noted the same thing. *B. glabra*, growing in more warmth, close under the roof, had very pale bracts in comparison. If the form of treatment mentioned is not responsible for the deepening of the floral colour, then are the two plants at Hackwood a distinct and beautiful variety. *A. D.*

FIGS, BROWN TURKEY AND OTHERS.—It is doubtful whether, as an out-of-doors Fig, we have a better and more useful variety than Brown Turkey. In the Isle of Thanet, Figs grow in the open with great freedom and productiveness, and need but little care and attention. At Northdown, there are several trees growing at the foot of walls near to hard gravel and asphalt footpaths, and under which the roots run, so that feeding or top-dressing is an impossibility; yet these trees bear heavy crops annually. No pruning is practised more than to remove straggling branches, to keep the trees within reasonable bounds. The soil is of a very chalky nature. The next best variety is Brunswick, and the fruits attain a large size, but are not so high in quality, although these monstrous fruits tell upon the exhibition table. Other dark-fruited varieties have been tried in different gardens, but have not proved equal to the kind mentioned above. White Marseilles is the only white one growing here, and although growing by the side of the others it is much less fruitful. This season we have had a very fair crop, and the fruits are delicious. They have ripened well owing to the hot, dry season we have had; but the trees are inclined to grow too strongly to be fruitful. *H. Markham, Northdown, Margate.*

THE BRUSSELS EXHIBITION.—From what I can learn, very few people have been over to see the exhibition at Brussels this year from England. I think it would repay many horticulturists to do so, because they would no doubt break their journey on the way home at Ghent, and there they would, if they elected to do so, see the immense strides that are being made in the erection of houses, and the improvements in the forms that they have found to be advantageous. I will, with your permission, enumerate a few of these. The staging consists of iron standards, and on these are screwed or riveted bars of T-iron, or angle-iron; then they take thin boards and place them on the before-mentioned T-iron bars; on this, wire-netting slightly turned up at the sides and at the end, is put, and it appeared to be made in lengths of about 10 feet. On to this wire-netting, cement and sand, mixed together with

water, are well rubbed in and smoothed down, and before it is quite dry holes are pierced in it to afford egress for the water; and when it has set sufficiently hard, the boards are withdrawn from under the wire-netting. This leaves a perfectly rigid staging that one can walk upon without any fear of its collapsing or cracking. A wide staging of this sort is placed in the centre, and two narrower ones on either side of the house. Another improvement which has been dictated by experience is to carry a hot-water pipe about 7 feet high the whole length of the house on either side, and, say, one-third of the distance across. The advantage of this is that in place of the cold air coming down from the lower part of the roof in frosty weather, a genial temperature is maintained thereabouts instead; which is not obtained if there are only hot pipes underneath in the old-fashioned style close to the floor. Water being a prime necessity in Belgium, they find that they can get constant service at Brussels and Bruges by the use of the Airmotors, and many contracts for these apparatus are given out. They are also finding out the great advantage of pumping by these machines into a tank carefully erected over a shed, well supported by the walls of the building, and letting the water reach their houses by gravitation. When the tank is built in under the roof the water rarely ever freezes. I made several journeys in different directions on the roads running outside these towns, and the number of glass-houses, and the acres of ground being covered by them, would surprise anyone who had not seen these towns for two or three years. Further than this, they put up a large central house, and around this central house they take care to have plenty of space for extending it. Houses are then built at right angles to this one, with all the doors opening out of this central house, so that in cold weather, when these doors are opened, no current of cold air enters the house. In all these new houses every precaution is taken to catch the rain-water, and lead it into enormous tanks. The quantities of *Asclepias indica* at the present time in the gardens point to the fact of the prices tumbling very rapidly if cold weather sets in. There have already been one or two sharp frosts, and many of the cultivators admit that it will be impossible for them to save their stock of plants if they do not get a little more time before the winter sets in, in earnest, or they must be prepared to accept very low prices. The plants that I saw were in splendid condition. Great improvements have been made in the heating arrangements; anthracite coal is now burnt, and they have learnt by experience the necessity of having high chimneys, and where they have not got the convenience of using bricks, large chimneys similarly constructed to the American style of factory-chimney, and made of sheet-iron, are erected. *Thos. Christy.*

THE ROSARY.

SOME NEW CONTINENTAL ROSES.

Emmanuel Geibel, Kiedlung, Lubeck.—The flowers of this admired novelty, now some years in commerce, are large, full, and very beautiful. In colour it resembles *Madame Falcot*. A fine variety for the open ground.

Gudrum, P. Jacobs, Wertendorf, is a hybrid Tea of the form of *Perle des Jardins*. The plant is extremely floriferous, every shoot carrying several flowers on long strong stalks. The colour is a glistening silvery rose-pink with a light fiery-red centre.

Louise Müller is a cross between a seedling of *Pierre Notting* and *Safrano*, and one of General Jacqueminot and *Emperor of Morocco*. It possesses the property of flowering from the beginning of June to the first autumnal frost without cessation. The colour of the flower is a lively shade of red. It is useful also as a climber.

Coronet, Dingee, Conard & Co.—This novelty was obtained by crossing Paul Neyron with *Bon Silene*. It is a magnificent, very full rose-pink, with a silvery tinge in the centre. The buds are dark-carmine. The plant is similar to Paul Neyron in habit, and it blooms early and continuously.

Mr. D. Lambert of Trèves has succeeded in obtaining a cross between *Rosa polyantha Aglaia* and *Turner's Crimson Rambler*. The progeny is said to possess very fine foliage, great floriferousness, and very full blooms of a tender hue. *Illustrations Garten Zeitung.*

In the *Journal des Roses* we read of a *Maréchal Nial* de M. Perny, which, according to the competent opinion of M. P. Cochet, will turn out to be a wonderfully useful Rose for the bouquet-maker. It is said to have been derived from the *Maréchal*, but it differs in colour from that variety, being rose, and sometimes changing to red. The expanded flowers have a diameter of 5 inches.

PLANT NOTES.

SCUTELLARIA MOCINIANA.

THIS is one of our most beautiful flowering stove-plants. It is a native of Mexico, and was introduced to this country in 1868. When arranged between pots of Maidenhair Fern, its bright scarlet flowers produce a pleasing effect. It is propagated by cuttings taken in the spring, and placed singly in small 60-pots in a temperature of 65°. The cuttings should be shifted into 48's when well rooted, using a compost consisting of one-half loam and one of leaf-soil, with a little sand added. By judicious pinching, nice, bushy plants, with many spikes of flowers, can be grown in this sized pot.

MORSA ROBINSONIANA IN CALIFORNIA.

This handsome Iridaceous plant, native of Lord Howe's Island, has been flowering beautifully in the garden of Mr. Geo. P. Rixford, secretary of the Californian Academy of Sciences, San Francisco, this summer. It was raised from seed sent by the late Baron von Mueller, in 1881, and this is the first time that it has flowered in California. The flowers are rather large, white with dark centres, and borne in spikes. Benthams says of this species that it is "known as the Wedding Flower. It is the largest species of the genus; the habit is that of the nearly-allied *Pardanthus chinensis*, the flowers are nearly those of the *Morssia iridioides*." *J. Burt Davy, Berkeley, California, September 3, 1897.*

LAW NOTES.

THEFT OF MUSHROOMS AT BECCLES.

WILLIAM CHILVERS, Leonard Betts, Benjamin Ward, and Henry Pitchers, Beccles boys, were charged with stealing Mushrooms, value 2s., the property of Mr. J. Edwin Crisp, at Homefield, on the 5th inst. Mr. J. P. Larkman appeared for the prosecution, and said this case was one of stealing cultivated Mushrooms, and he should be able to call witnesses to prove cultivation without any doubt.

Mr. J. E. Crisp said he was the owner and occupier of the house and grounds known as Homefield. Part of his grounds consisted of enclosed land adjoining the house, and extending down to St. Mary's Road. The land was ordinary arable land before he laid it down, and he gave orders to have it planted with Mushroom spawn. This was done by Robert Moore, his gardener at the time. Since then he has had good crops of Mushrooms—the crops varying, of course, with the weather. Lately he had missed Mushrooms; there had been plenty in the evening, and none in the morning. In consequence he communicated with Inspector Lingley.

Robert Moore, gardener at Belstead Hall, near Ipswich, said he was formerly gardener to Mr. Crisp, and while in his employ received orders to sow Mushroom-spawn on the lawn, which he did. By the Bench: He sowed the spawn seven or eight years ago. By Mr. Larkman: When once sown the spawn would go on increasing by itself. It was not necessary to sow it annually.

Police-constable H. Churchyard said he was on duty on Sunday morning in Mr. Crisp's park. About 4.30 he saw the four defendants come from St. Mary's Road into the park, spread themselves out about 20 yards apart, and go round the park gathering Mushrooms. They had a basket (produced) to put them in. He saw all the boys gather Mushrooms.

Chilvers said they did not go inside the park; they went on the lawn.

Witnesses said the boys did not go where the deer were.

The Bench retired, and on their return the Chairman said they were all convicted, and would be fined 7s. 6d. each, in default seven days. A fortnight was allowed to pay. Ward paid at once. *East Suffolk Gazette.*

INFERIOR MANURE.

At Lichfield, Wednesday, September 22, Margaret Catherine Ginster, Frank Ginster, and Rudolph Ginster, trading as M. C. Ginster & Sons, patent manure manufacturers, Erdington, Birmingham, were charged at the instance of the Staffordshire County Council with breaches of the Fertilisers and Feeding Stuffs Act, 1893, by having failed to supply invoices and details of analysis with two loads of turnip-manure purchased by Mr. Nigel C. A. Neville, stipendiary magistrate of Wolverhampton, for use on his farm at Shenstone in June and July last. Mr. Fisher prosecuted on behalf of the county council, and Mr. Vachell appeared for the defence. The manure purchased was advertised to contain fish-blood, horn-hoofs, flesh, bones, and other animal-matter, with a trace of flour, of which some were dissolved and some undissolved, some partly soluble and some insoluble, because, if manufactured all soluble, it would be too rich for the first crop, the aim being to grow two crops without the assistance of stable-manure. The manure was sold at from £6 10s. to £7 10s., and Mr. Neville purchased two and a half tons in June, and half a ton in July. Not having been supplied with proper invoices and analyses, and failing to secure satisfactory results from the manure, Mr. Neville sent samples of the last load to Mr. E. W. T. Jones, the county analyst of Staffordshire. That gentleman said the manure consisted of blood and animal-matter largely mixed with shoddy, and he pronounced the samples to be rubbish, not worth more than £2 to £3 per ton. Mr. Ginster, senior, declared the manure was what it was represented to be in the advertisements. The Bench imposed a penalty of £2 and costs on each of the three members of the firm for each of the two offences, and allowed the county council £15 15s. for special costs. The full penalties and costs amounted to £33 18s. *Times, September 23, 1897.*

NURSERY NOTES.

MESSRS. JOHN LAING AND SONS.

A RECENT inspection of the fruit trees grown by this firm was suggestive of some retrospective thoughts in connection with the fruit question, and they fashioned themselves into looking back—say, to 1883—when the first famous Apple conference was held at Chiswick under the auspices of the Royal Horticultural Society, followed in later years by similar conferences under the same good lead. There is no need to question the belief that these gatherings drew increased attention to pomological matters, with the result that hardy fruit culture, if it has not advanced by leaps and bounds, is making sensible progress.

In conversation with Messrs. Laing's able manager here, Mr. Wakelin, it was gleaned that a more beautiful display of Apple blossom was never seen, but the high hopes once held of a great fruit crop were dashed by late frosts; still, there is a good sprinkling. Amongst the earlier varieties where the set was early, of course the deficiencies are not so noticeable; but amongst the late varieties which were in flower when the frost came the loss is much greater. The soil of the fruit grounds consists of a light, yellow, sandy, maiden loam. The trees are not winter-pruned, but summer-pinched. To numbers of persons who grow their trees within restricted areas, and subject them to much branch pruning, this is a point of much importance.

Regarding the important question of stocks, the adaptability of the Quince for Pears and the Paradise for Apples has been amply proved here by the mass

of roots these stocks produce on the surface, thus obtaining all the benefit of the sun's warmth, and the stimulating action from manurial mulchings and waterings. Herein, doubtless, lies the secret of the production of fine fruit both for table and exhibition. In such a nursery as this, where the demand for trees is great, one noted them grown—and grown well—in the various forms to suit the many requirements. Amongst Apples, the standards and half-standards were noticeable by reason of their straight, bright-looking stems, and good heads. Then, what a sight were the sturdy young bush-trees, 2½ to 3 feet high! The pyramid-trained trees, too, are in excellent condition—well-formed trees, with good lower boughs. Noteworthy was a very large stock of standard Apples on Crab-stock for orchards; horizontal and fan-shaped trees also arrested our attention, as did a fine batch of young Apple stocks on Crab and Paradise, and Pears on Quince, and double-worked. Cordon Apples, so useful as edgings for garden-walks, or for training to walls obliquely, are well cared for, being represented by a fine stock; the trees bear very quickly, and produce handsome fruit.

It may prove of interest to allude to some of the finer Apples grown here. Bismarck, extra-large, similar to Nonsuch, but with more colour, a great bearer, keeps well, and retains its flavour till the end of April. Potts' Seedling, very free bearing, a culinary Apple of the first quality; it forms a medium size pyramid, and does well as a standard. Lane's Prince Albert is a variety that no garden should be without, forming as it does a medium-sized bush or standard, and it is a prolific bearer. Lord Suffield is one of the very best early varieties, and a great cropper, and of which a good stock is grown. Well worthy of mention is the constant cropper Manx's Codlin, bearing when even quite young, and forming a small but very handsome pyramid on the Paradise. Lord Derby is a good orchard or garden variety, and is withal a handsome Apple, a strong grower, great bearer, and a variety of the first quality. Calville d'Été is a fine crisp fruit of medium size.

Pears, too, are well grown, being represented by a vigorous stock in all shapes—standards, half-standards, pyramids, dwarf fan-trained, and horizontal trained (for walls and espaliers), bush-trees and cordons, single, upright, and diagonal. The newest variety, Le Lectier, melting, good flavoured, and a good cropper, is worthy of mention.

There is a very fine quarter of large fruiting Peaches and Nectarines—trees with thirty and forty shoots on them. Highly worthy of special mention is the fine stock of dwarf-trained large trees of that fine Nectarine, Early Rivers, a very fine, large, and early variety, of exquisite flavour. There is also a large stock of extra sized Peaches, Nectarines, and Apricots for orchard-house culture, and another good batch of trees coming on for that same and certain method of securing a crop of fine fruit. Quite worthy of mention, too (for orchard-house culture), is a good stock of Apples, Pears, Plums, and Cherries in pots of the newer and good varieties, hardened off and well-budded.

It is not often that one sees, as at this nursery, such a stock of dwarf-trained, extra-sized Apricots. Not a sign of the dreaded canker, so often seen, but free from this scourge, and representing a clean, healthy, and vigorous stock.

The Cherry occupies an important position among our dessert fruit, not only on account of its beauty and delicious flavour, but because some of the varieties are the first to ripen of our out-of-door fruits, and, as is well known, it is also well adapted for cultivation under glass. Here Cherry-trees in all the popular sorts may be seen in all shapes for training or otherwise. Likewise noteworthy are the Cordons, pyramids and standards. We noticed a good and healthy batch of *Cerasus Mahaleb*, the stock that all the Duke Cherries are worked upon. After Apples, the most profitable crop to grow is unquestionably Plums, and here is grown a fine stock of the best varieties, and in the various forms of tree required to bring about the most satisfactory by would-be cultivators.

A general collection of hardy ornamental trees is grown here, such as Elms, Acers, Acacias, &c. The new golden-leaved Maple—*Acer aureo-variegatum*—presenting a good bit of colour, is a first-rate novelty worthy of the attention of planters. Conifers, too, and various hardy climbers are also well grown at Forest Hill.

As is well known, by the frequent and successful appearance of the firm at our leading exhibitions, the Rose is very extensively cultivated by them. Here were seen many thousands of Rose-trees and bushes. 35,000 standard Briars were being budded, and a good batch was noted of Manetti stocks and seedling Briars just budded. Of standard Roses there is a big and healthy stock, in all the popular varieties.

At the branch nursery, the main display of bedding Begonias has now been for the first time concentrated, and for which increasingly popular class of flowers the firm have deservedly gained a world-wide fame by reason of their persevering and successful work amongst them. The change of soil from Forest Hill was evidently a move in the right direction. The plants are arranged in very long beds, about 4 feet wide, representing thousands of plants, and arranged in their different colours. It is a wonderful collection, literally exposed to the four winds of heaven.

Lacking indeed of the quality of appreciation would be the visitor who could gaze, without admiration, on the Begonias found at this branch in the various structures devoted to their cultivation. We noted the following as amongst some of the best of the double-flowered varieties, and raised by the firm:—Mr. John T. Bennett-Poß: this grand variety has splendid flowers, which are beautifully fringed and Camellia-formed, of good substance, and perfectly erect; Marchioness of Downshire, a fine deep crimson, very dwarf, large, erect flowers; Lady Frederick Fitzroy, a superb yellow Apricot, excellent Camellia-formed flowers, most attractive, and should be in every collection of Begonias; Invincible, vivid crimson fine form, habit and substance extra fine; Ernest T. Cook, a splendid dark glowing crimson, large and full double flowers, one of the best in this colour; Empress Frederick, rich rosy-pink, rose-shaped flowers, superb; Cléo, a fine frilled yellow; Lady Wilton, beautiful pinky-salmon, Camellia-shaped flowers, bushy habit, extra fine; Lady Williams Wynne, a magnificent deep yellow, very large full Camellia-shaped flowers, erect habit, a splendid variety; Duchess of Northumberland, a handsome bright salmon, extra large flowers; Duke of Fife, a beautiful rosy-salmon, very large erect double flowers, distinct, good habit, floriferous.

The stock of Crotons, some of the best, showed numerous highly cultivated varieties. One noted superb ornamental-leaved Begonia, hybrids of B. Rex, of which a splendid variety is Louis Cappe, silvery satin-white leaves, rose veins surrounded with green.

In the excellent and varied collection of Ferns, we noted *Adiantum Lambertianum*, exceedingly small pinnae, with gracefully pendulous fronds; *A. Weigandi*, a very distinct kind, fronds crispy, and pinnae slightly overlapping. An acquisition, and a beautifully variegated plant, is *Bougainvillea speciosa variegata*. Another good variegated plant is *Nicotiana affinis variegata*. *Anthurium Fendleriense* was notable with its bold habit and broad foliage. *Cissus argentea* is uncommon, and *Cyanophyllum magnificum* is one of the most beautiful foliage-plants in cultivation, but rarely seen nowadays.

In the outside quarters was noted a very fine collection of new and improved varieties of Cactus, Pompom, show, and single Dahlias. A mass of *Chrysanthemum maximum*. Duchess of Abercorn, was noted as a good thing with its large pure white handsome flowers. Decided acquisitions for the flower-garden are:—*Antirrhinum album floribundum*, a beautiful snow-white variety, dwarf and floriferous. A Crimson Bedder, deep crimson self, of a dwarf compact habit; a most effective variety. A Yellow Bedder, pure yellow self; is a valuable novelty. J. B.

SOCIETIES.

ROYAL HORTICULTURAL.

BRITISH-GROWN FRUITS AT THE CRYSTAL PALACE

(See also p. 234.)

Thursday, Sept. 33, and two following days.

A REALLY good show of British-grown fruits was opened at the Crystal Palace on Thursday. There may have been misgivings on the part of the management that the comparative scarcity of Apples and Pears this season, would result in a poor show. If this was the case, the fears have not been realised. It was a most satisfactory display, and in a measure, an astonishing one. Grapes as a rule were not of exceptional quality, but they were fair. Apples and Pears, however,—in fact hardy fruits, were shown abundantly, even more numerous than in last season, for we are informed that 1000 extra plates have been in requisition. The average quality throughout was high; there being but little disparity in many instances between the 1st, 2nd and 3rd prize collections. The arrangements worked smoothly, and considering the amount of work such a show throws upon the secretaries of the society, Mr. WRIGHT, the superintendent at Chiswick, and his assistant Mr. HUMPHREYS, the society's officers are entitled to congratulatory commendation.

The Schedule was composed of the following divisions:—Division I., fruits grown under glass or otherwise, open to gardeners and amateurs only, containing fifteen classes; Division II., including seven classes, open to nurserymen only; Division III., for fruits grown in the open air, nurserymen excluded, containing twenty-four classes; Division IV., for single dishes of fruit grown in the open air, nurserymen excluded, containing ninety-four classes; and Division V., composed of the Veitchian classes for flavour in Apples and Pears.

DIVISION I.

The 1st class was for twelve dishes of ripe dessert fruits, with certain restrictions as to the number of varieties of any one kind. The three competitors were Lady H. SOMERSET, Eastnor Castle, Ledbury (gr., Mr. F. Harris); The Earl of HARRINGTON, Elvaston Castle, Derby (gr., Mr. J. H. Goodacre); and Sir J. W. FRASER, Bart., Hutton Hall, Guisborough (gr., Mr. McIndoe). The prizes were awarded in the order in which we have given the names. Mr. McIndoe was less fortunate than usual, but there was no mistake made in the judging; the collection from Mr. Harris was ahead. His Grapes were Muscat of Alexandria, good large bunches but berries only indifferently coloured; and Gros Maroc. He had a good Pine-apple, a seedling Melon; Pear, Pitmaston Duchess; Apples, Ribston Pippin and King of Pippins; Peaches, Sea Eagle and Prince of Wales; Nectarine, Albert Victor; Plum, Golden Drop, and Brunswick Figs. The collection from Mr. J. H. GOODACRE contained Muscat and Black Hamburg Grapes, Pine-apple Nectarine, Brown Turkey Fig, two dishes of Plums, and one of Peaches (Sea Eagle), Pine-apple Nectarine, Hero of Lockridge Melon, Queen Pine, Pitmaston Duchess, and Souvenir du Congrès Pears, and American Mother Apple.

Mr. McIndoe's Gros Guillaume Grapes were good in bunch, but had been knocked about considerably. He had Buckland Sweetwater for the other variety. He had two dishes of Apples, two of Pears, two of Plums, and two of Peaches.

The competition for the best collection of eight dishes was limited to exhibitors who had not competed in the larger class. There were six fruit-growers in competition here, and the 1st prize was won by Mr. Geo. REYNOLDS, gr. to Messrs. De Rothschild, Gunnersbury Park, Acton, W. He had well-coloured, moderate-sized bunches of Muscat of Alexandria Grapes, and excellently-berried, but not well-coloured bunches, of Gros Maroc. A fine Melon, the fruit of a seedling; Gladstone and Princess of Wales Peaches, both very good, the latter unusually well coloured; Pine-apple Nectarine, very well coloured; Ribston Pippin Apple, and Cox's Golden Drop Plum. The 2nd prize went to Mr. W. J. ENYON, gr. to Mrs. WINGFIELD, Amptill House, Amptill. He had fine Black Alicante Grapes, three bunches of Golden Queen, an Eastnor Castle Melon, two dishes of Peaches, a good dish of Doyenné du Comice Pear, Brown Turkey Figs, and Cox's Golden Drop Plum. The 3rd prize was taken by Mr. W. TIDY, gr. to W. K. D'ARCY, Esq., Stanmore Hall, Middlesex, who included in his collection a dish of fruits of *Passiflora edulis*. The other exhibitors in this class were Mr. F. COLE, gr. to Sir Geo. RUSSELL, Bart., Swallowfield Park, Reading; Mr. SMITH, gr. to R. AVEY, Esq., Bridgemoor House, Henley-on-Thames; and Mr. W. TAYLOR, gr. to C. BAYER, Esq., Tewkesbury Lodge, Forest Hill, S.E.

Figs, one dish.—There were eleven dishes of Figs staged, the best being Brown Turkey, shown by Mr. W. Messenger, gr. to C. H. BERNERS, Esq., Woolverstone Park, Ipswich. The same variety from Mr. H. FOLKES, gr. to C. E. STRACHAN, Esq., Gaddesden Place, Hemel Hempstead, was 2nd; and Mr. W. MITCHELL, gr. to W. FLEMING, Esq., Chulworth Manor, Romsey, again with the same variety, was 3rd. None of the newer and better flavoured sorts were shown, a matter of some surprise.

Collection of Hardy Fruits not exceeding Fifty Dishes.—These fruits were grown entirely in the open, and there were three

competitors. The 1st prize was won by Mr. Geo. REYNOLDS, gr. to Earl Percy, Syon House, Brentford, with a much excellence. The Apples shown best were Pippin, Ribston Pippin, Alfriston, Lord Derby, King, Wealthy, and Cox's Orange Pippin. The Pears were good:—Doyenné Boussoch, Jean Van Gommaston Duchess, Beurré Diel, and Brown Beurré. Of these were Admirable, Barrington, Golden Eagle, W. Admirable, Sea Eagle, and Nectarine. Plums, Cox's Drop, Pond's Seedling, Wyedale, and Washington; Shropshire Prune, Morello Cherries, Filberts, Wals Hazelnuts, and a few bunches of Sweetwater Grape fruits were placed upon coloured foliage on plates, exhibit had a good effect. The 2nd prize went to Powell, gr. to Colonel BAYMER, M.P., Islington Hoe, Chester. No trouble was taken in this case to set fruits in a decorated fashion, but the quality of the Apples and Pears was very good. The collection contained dishes of Peaches, two dishes of Nuts, one of Medlar, Cox's Golden Drop Plum, and three bunches of Sea Grapes; all the rest were Apples and Pears, most of very large size. Mr. W. MILLER, gr. to Lord Foley, Lodge, Claygate, Esher, was 3rd, exhibiting Apples, also Filberts, Walnuts, Brown Turkey Figs, and Medlars.

Collection of Hardy Fruit not exceeding thirty-six dishes.—This class was intended to illustrate house culture, and might be grown partly or entirely glass. There were only two exhibitors, the 1st prize taken by Mr. R. POTTER, gr. to Sir MARK COLLET, Clero, Kensing, Sevenoaks. He had Foster's Seedling and Gros Maroc Grapes, Rondi Noir and Brown Figs, Princess of Wales and Lady Palmerston No Golden Eagle Peaches, Autumn Compote and Golden Drop Plums, and the rest were Apples. Some of the Pears were very large, fine specimen of d'Angoulême, Marie Louise d'Uccle, Boussoch, Pitmaston Duchess, Marguerite, and others were noticed. Apples, too, exhibited culture. The best were Emperor Alexander, the Ribston Pippin, Baldwin, King of Tomkins Cou, Lady Henniker. Mr. J. McINDOE was awarded 2nd and a very good collection it was. His Grapes were Hamburg, Foster's Seedling, and Gros Maroc, three of each. Peaches, Mrs. Sharpe, Champion, Golden Sea Eagle, and others; Plums, Pond's Seedling, Cox's Drop, Magnum Bonum, Late Transparent Gage, B. Green Gage, Archduke, Prince Englebert, Comice Gage, &c. His Negro Largo Figs, Apples and Pears, fine, and among the Apples we noticed the very variety James Grieve.

GRAPES.

ix distinct varieties, two bunches of each: both 1 White must be represented.—Mr. REYNOLDS, gr. to M. Rothschild, Gunnersbury Park, Acton, won well the position here, with three black and three white: the former being Black Hamburg, well kept and colour; Gros Maroc, fine in berry and colour; Ni Court, well finished; and of the latter well-coloured bunches of Muscat of Alexandria, specially fine; Napoleon, clear in berry and well-coloured; a examples of Buckland Sweetwater. Mr. TAYLOR, BAYER, Esq., Tewkesbury Lodge, Forest Hill, S.E. a good 2nd, his best being very fine Madresfield Co in berry and well finished; good Muscats, fine Gros and Gros Maroc, with Gros Guillaume. Mr. GOODACRE, Earl of HARRINGTON, Elvaston Castle, Derby, belt 3rd, he staging well-finished bunches, the best being Pearson, extra fine in bunch and berry; Mrs. Pin Black Hamburg and Muscats.

For three varieties Grapes, distinct, two bunches 1 Mr. COLE, gr. to Sir Geo. RUSSELL, Bart., M.P., Sw Park, Reading, was easily first with splendidly Muscated, very clear in the berry; good Alicante and Seedling, both well finished. Mr. JONES, Ridgway Cradley, Malvern, came 2nd with Gros Maroc, Gros and Alicante, all well coloured medium-sized bunches. Harris, gr. to Lady HENRY SOMERSET, Ledbury, his best being Muscated and Gros Colmar, which close, if not superior to the 2nd.

For three bunches, Black Hamburg.—Mr. MITCHELL, J. W. FLEMING, Esq., Chilworth Manor, Romsey, to the front with large bunches, very fine in the superbly coloured. Mr. TAYLOR was a good 2nd lacking colour, and Mr. REYNOLDS 3rd.

For three bunches, Madresfield Court.—Mr. TAYLOR his exhibit being excellent, very fine in berry coloured. Mr. W. TIDY, gr. to W. K. D'ARCY, Esq., more Hall following, his Grapes all lacking colour, gr. to Mrs. WINGFIELD, Amptill House, a good 3rd.

For three bunches Gros Colmar, or Gros Maroc, Mr. won with the former, the fruit being fine, the bunches were the berries; Mr. REYNOLDS followed with Gros Maroc, showing large bunches; Mr. COLE being the last-named variety.

For three bunches Alicante, Mr. F. COLE was 1st, with well proportioned, and the colour good; Mr. J. BUSHAM, Vineries, 1st, showing well for 2nd p How, gr. to HENRY TATE, Esq., Park Hill, S. Common, followed, exceedingly close, with bunches of the three.

For Three Bunches Lady Down.—Mr. TIDY was place with well finished bunches of medium size, son following with a good exhibit; Mr. KEMP, gr. SCRABE DICKENS, Esq., Chulworth Manor, Romsey, prize.

For Three Bunches of any other Black Grapes. Mr. MITCHELL won easily with beautiful examples of Mrs. Pines, much finer than it is usually staged, these examples being well-coloured, and the bunches weighty. Mr. W. Smith, gr. to R. OVERT, Esq., Badgemore House, Henley-on-Thames, coming 2nd with Alnwick Seedling; and Mr. REYNOLDS 3rd with the same variety.

For three bunches of Muscat of Alexandria.—Mr. F. COLE won the premier award with perfect examples, superbly coloured, and fine in bunch and berry. Mr. GOODACKER was placed 2nd with large bunches, but scarcely so well finished; and Mr. REYNOLDS 3rd, wherein the colour was better, but the berries rather smaller than in the former case.

For three bunches of any other White.—Mr. REYNOLDS was well to the front with Chasselas Napoleon, finely finished, clear in the skin, and large in berry; Mr. TAYLOR following with Buckland Sweetwater in good condition; Mr. Lane, gr. to Miss RIDGE, Highfield, Englefield Green, 3rd with Chasselas Napoleon.

DIVISION II.

NURSERYMEN ONLY.

Collection of Fruit Trees Bearing Fruit in Pots.—Messrs. T. RIVERS & SONS, Sawbridgeworth, had no competitor in this class, their exhibit being the only one of its kind in the show. The trees were stood upon a table, and were individually beautiful pictures indeed. The following Apples we noticed:—Bijou, Cox's Pomona, Bramley's Seedling, and Bismarck; Pears, Chis. Ernest, Duchesse de Mouchy, Pitmaston Duchess, Conference, Lebrun, President D'Orsmannville, Uvedale's St. Germain, Durandau, Bergamotte d'Esperen, Doyenné du Comice, Marie Louise d'Uccle, and Durandau. Cox's Golden Drop Plum, Golden Eagle Peach, and several crabs were also included as trees in pots.

The table was capitably furnished 'twixt the pots with gathered fruits. There were splendid Grapes of Black Alicante, Muscat of Alexandria, Golden Queen (Pearson), and Gros Maroc. Peaches included Lady Palmerston and Golden Eagle. Plums: Primate (Rivers), a late red variety, Cox's Golden Drop, Decalane, Grand Duke, Jefferson, Golden Transparent, a half purple coloured sport from Golden Drop, and a medium sized yellow Plum, a seedling. Apples and Pears were well represented; Louise Bonne of Jersey was very large and well-coloured; Souvenir du Congrès and Doyenné du Comice, and other first-class Pears being shown finely. A monster fruit of Pitmaston Duchess, said to weigh 2 lb., and covered with a glass case, caused considerable attraction, as did also the large handsome fruits of Peasgood's Nonsuch Apple, and other sorts better in quality, but not so alluring in appearance. The 1st prize was well deserved, but absence of competition is regrettable.

Collection of Hardy Fruits grown partly or entirely under Glass.—The produce in this class was to illustrate Orchard-house culture; and though there was but one exhibit, this was effected fairly well. Messrs. GEO. BUNYARD & CO., Maidstone, showed, and the table laden with their produce looked capital. In the centre were fruit-trees in pots from end to end, including Vines, Pears, Apples and Figs. A plant in the centre, of Cornish Aromatic Apple, was laden with highly coloured fruits. Durandau and other Pears on trees were likewise good. The fruit on dishes, however, were the best. Such Pears as the following were granted: Doyenné du Comice, Pitmaston Duchess, Beurré Dumont, Marie Benoist, Conference, Beurré Fonqueray, Marie Louise d'Uccle, Directeur Alphonse, and Souvenir du Congrès. Of Apples, out of a large number of varieties, the following appeared specially fine: Lane's Prince Albert, Grandisier, Flander's Pearmain, Mother, Lady Sudeley, Belle de Pontolise, Gasconne's Scarlet Seedling (really wonderful in colour), Ribston Pippin, Peasgood's Nonsuch, Cox's Orange Pippin, Warner's King, Wadhurst Pippin, Baumann's Red Winter Reinette, Washington, R. Culver, Twenty Ounce, Alexander, Annie Elizabeth, &c. A few Grapes, Peaches, and Tomatoes were also included in the exhibit.

Collection of not fewer than Seventy-five or more than 100 distinct varieties of Hardy Fruits.—Messrs. GEO. BUNYARD & CO., Maidstone, were again 1st, beating two other exhibitors. It was permissible in this class to use a few foliage plants to lighten the effect of the exhibit. The most that was done in this direction was to place a Palm at the apex of a few of the more important pyramidal piles of Apples. In Messrs. BUNYARD's exhibit there was a large pile of Apples arranged in the centre, of varieties of high colour for effect, and it greatly helped to set off the exhibit. The whole of the fruits had been grown in the open air. Varieties of Apples that specially attracted attention were: Stones, Cox's Pomona, Baumann's Red Winter Reinette, The Queen, River's Codlin, Stirling Castle, Yorkshire Beauty, Washington, Lady Sudeley (capital), Newton Wonder, Bow Hill Pippin, Tibbitt's Pearmain, New Hawthornden, Vicar of Brighton, Lane's Prince Albert, Tower of Glamis, Mother, Brambling's Seedling, Fyggmore Prolific, Col. Vaughan, Twenty Ounce, Ribston Pippin, Lady Henniker, Jas. Grieve, Mère de Ménage, Cox's Orange Pippin, Lord Derby, Golden Noble, Gloria Mundi, Emperor Alexander, King of the Pippins, Of Pears the Duchesse d'Angoulême, Beurré Diel, Beurré Hardy, Conference, Doyenné Bussocch, Gansell's Bergamotte, Pitmaston Duchess, Souvenir du Congrès, Marie Louise d'Uccle, &c. The 2nd prize was taken by Mr. H. BARNWICK, Sidmouth Nurseries, Devon. A considerable part of this exhibit was arranged in baskets, and the fruit was decidedly good in quality and size. By the inclusion of a number of high coloured sorts the effect of the collection was good, though not set up so tastefully as the 1st prize exhibit.

Collection of not fewer than thirty or more than fifty distinct

varieties of Hardy Fruits.—There was only one exhibitor in this class, namely, Mr. J. COLWILL, The Nurseries, Sidmouth. All of the produce had been cultivated in the open air, and the Apples deserve the highest commendation. Most of the fruits were put up in baskets, and the best Apples in a splendid collection were Cox's Orange Pippin, Warner's King, Tyler's Kernel, Emperor Alexander, Gravenstein, Golden Noble, Dumelow's Seedling, Peasgood's Nonsuch, King of Pippins, Autumn Pearmain, Collini Pippin, Alfriston, Mère de Ménage, New Hawthornden, Beauty of Kent, Lane's Prince Albert, Worcester Pearmain, Newton Wonder, Lord Suffield. Pears were equally fine in many instances. There were also a few Peaches and other fruits.

For a Collection of not fewer than thirty or more than fifty distinct varieties of Pears in baskets or dishes grown entirely in the open air, table space of 24 feet by 8 feet.—Mr. H. BARNWICK, Sidmouth, South Devon, was 1st with fruits of medium size only, but bearing every evidence of excellent quality, the best dishes were those of Haeon's Incomparable, Durandau, Jersey Gratioli, Autumn Bergamotte, Pitmaston Duchess, Brown Beurré, Beurré Superfin, Doyenné Bussocch, and Catillac.

Collection of not fewer than thirty or more than fifty distinct varieties of Apples in baskets or dishes, grown entirely in the open air, on a table space, 24 feet by 8 feet.—This class brought forth some splendid produce from Mr. JOHN BASHAM, Nurseryman, &c., Fair Oak Nurseries, Basingstoke, near Newport, Monmouth. The finer and better known kinds were staged in square baskets, making a most effective background to those in dishes. The finer of these were Tyler's Kernel, Warner's King, Crimson Queen, Sandringham, Lane's Prince Albert, Bismarck, Beauty of Kent, Newton Wonder (extra fine), Ecklinville Seedling, Cox's Orange Pippin (very large and fine), Ribston Pippin (equally good), and Egremont Russet. This exhibit was characterised by fine finish, large size, solidity, and clearness of the skin, proving beyond any doubt that this locality is especially well suited to Apples.

DIVISION III.

FRUITS GROWN IN THE OPEN.

Gardeners and Amateurs Only.

Apples, twenty four dishes, distinct; sixteen cooking, eight dessert.—There were six collections staged. Mr. WOODWARD, of Barham Court, Maidstone, coming 1st, with superb examples of Peasgood's Nonsuch, Warner's King, Stone's Apple, Belle Dubois, Brabant Bellefleur, Tower of Glamis, Mère de Ménage, Bismarck, Ecklinville, &c. Of cooking and of dessert, fine Cox's Orange Pippin, Washington, Ribston Pippin, Gasconne's Scarlet, Alington Pippin, Calville Rouge, Baumann's Winter Reinette, and American Mother; Mr. C. A. Bayford, gr. to W. C. LEE-CAMPBELL, Esq., Gleaston Court, Herefordshire, was 2nd, having fine Warner's King, Peasgood's Nonsuch, Tyler's Kernel, Prince Albert, Stirling Castle, Pott's Seedlings, and for dessert Ribston Pippin, King of the Pippin, Cox's Orange Pippin, Mother Apple, Duchess Favourite, Baumann's Reinette; Mr. Goldsmith, gr. to Sir E. LOREN, Horsham, was 3rd, having Peasgood's Nonsuch, Prince Albert, The Queen, Cox's Pomona, Mrs. Burron, Emperor Alexander; and of desserts, Blenheim Pippin, Adam's Pearmain, Wealthy, King of the Pippin, and Ribston Pippin.

Twelve dishes distinct; eight cooking and four dessert.—There were six lots again here, the best coming from Mr. W. PRAGNELL, gr. to J. M. WINDFIELD DIBBY, Esq., Shorborn Castle, who had fine Peasgood's Nonsuch, Warner's King, Bismarck, Annie Elizabeth, Emperor Alexander, and Alfriston, with Sturmer Pippin, Cox's Orange, Ribston, and King Pippin, the latter rather poor. Mr. MILLER, gr. to T. W. STARRUP, Esq., Maidstone, was 2nd, having good Lord Derby, Warner's King, Cox's Pomona, The Queen, &c., and handsome Cox's Orange and Ribston Pippins, Worcester Pearmain, and Gasconne's Scarlet, very fine. Mr. J. HILL, gr. to C. M. W. ADAMS, Esq., Babraham Hall, Cambridge, was 3rd.

Nine dishes of Apples, six cooking and three dessert, brought two collections. Mr. BLOGROVE, gr. to Mrs. OSWALD, Reigate, was 1st, having very good samples of varieties already named; Mr. HERBERT, gr. to J. T. CHARLESWORTH, Esq., Redhill, was 2nd.

Six dishes of Cooking Apples, distinct, again brought six competitors. Mr. WOODWARD again being the fore with superb Mère de Ménage, Emperor Alexander, Peasgood's Nonsuch, Lord Derby, and Warner's King. Mr. LEWIS, gr. to T. OLIVERSON, Esq., Maidstone, was 2nd; and Mr. RICKWOOD, gr. to Lady FRAZER, Twickenham, 3rd. One collection was in this class disqualified, the exhibitor having Baumann's Red Reinette in it as a cooking Apple.

Three Dishes of Cooking Apples, distinct, had seven collections. Mr. GOLDSMITH being 1st with fine Lord Derby, Peasgood's Nonsuch, and Warner's King; Mr. J. POWELL, gr. to Col. BRYNER, M.P., Dorchester, had same varieties; Mr. A. D. COOK, Mereworth, Kent, was 3rd.

Six Dishes of Bramley's Seedling was rather a disappointing class, as the examples were rather poor. The best came from Mr. KING, gr. to J. COLMAN, Esq., Reigate; Mr. TURBOTT, gr. to J. HARRIS, Esq., Malden, Erleigh, Reigate, was 2nd; Mr. H. HOWARD, Hingham, Norfolk, coming 3rd. There were only three entries.

Six dishes of Dessert Apples, distinct, brought eight collections, colour in the class being a marked feature. Mr. WOODWARD was 1st here, having beautiful Mother Apples, Cox's Orange, Ribston Pippins, Washington, Gasconne's Scarlet, and Baumann's Red Reinette; Mr. MILLER was 2nd, having Worcester Pearmain, Blenheim Pippin, King Pippin; Mr. GOLDSMITH was 3rd.

Three dishes of Dessert Apples, distinct.—There were eleven entries in this class, Mr. BAYFORD coming 1st with King and Ribston Pippins, and Washington; Mr. A. KEMP, gr. to O. M. SCRAN DICKENS, Esq., Mersham, was 2nd, having Cox's Ribston Pippins and American Mother; Mr. R. POTTER, gr. to Mr. MARK ALLET, Bark, Sevenoaks coming 3rd.

Twelve dishes of Dessert Pears, distinct, brought six lots, the best, and a grand lot of fruit coming from Mr. G. WOODWARD, who had Doyenné-Merode, Durandau, Pitmaston Duchess, Marie Benoist, Duchesse d'Angoulême, Beurré Baltet, Emile d'Heyst, Doyenné du Comice, Beurré Superfin, and Princeps; Mr. GOLDSMITH was 2nd with Doyenné Bussocch, Marguerite Marillat, Doyenné du Comice, Souvenir du Congrès, Maie Louise, Beurré Nigor. Mr. J. POWELL was 3rd.

Nine dishes of Pears, dessert, distinct.—Here the collections were five, the best coming from Mr. W. COTTERELL, who had Pitmaston Duchess, Louise Bonne, Beurré Boac, Durandau, Gansell's Bergamotte, Beurré Hardy, and others; Mr. W. JONES, gr. to J. BROTHAM, Esq., Carshalton, was 2nd; and Mr. BACKWOOD, 3rd.

Six dishes of Dessert Pears, distinct, brought sixteen entries, the best coming from Mr. MESSINGER, gr. to C. H. BERNERS, Esq., Woolverstone, Ipswich, who had Pitmaston Duchess, Beurré Baltet, Doyenné du Comice, Beurré Hardy, Durandau, and Louise Bonne; Mr. STOBOROV was 2nd; and Mr. BASILE, gr. to the Rev. O. POWELL, Weybridge, was 3rd.

Three Dishes of Dessert Pears, distinct.—Six entries. Mr. R. EDWARDS, gr. to C. W. FIELD, Esq., Sevenoaks, had the best with Madame Treve, Doyenné du Comice, and Pitmaston Duchess; Mr. FENNELL, gr. to W. M. CAZALAT, Esq., Tunbridge, was 2nd, having Marguerite Marillat, Souvenir du Congrès, and Pitmaston Duchess; Mr. HARRIS, gr. to O. A. SMITH, Esq., East Grinstead, was 3rd.

Three dishes of cooking Pears, distinct.—Four entries. Mr. WOODWARD was 1st with fine Catillac, Triomphe de Jodoigne, and Gros Calabasse. Mr. GOLDSMITH was 2nd with Uvedale's St. Germain, Catillac, and Triomphe de Jodoigne. Mr. R. CHAMBERLAIN, gr. to F. H. MORAN, Esq., Reading, coming 3rd.

One dish of cooking Pears brought four dishes. A. O. SMITH Esq., gr. Mr. HARRIS, was 1st, having gigantic Catillac, Uvedale's St. Germain, H. Brocka, Esq., Petersham, coming 2nd.

Three dishes of Peaches, distinct, ten lots.—Mr. WOODWARD had rich-coloured fruits for the 1st prize in Princess of Wales, Sea Eagle, and Victoria; Mr. F. HARRIS, gr. to Lady H. SOMERSET, Eastnor Castle, was 2nd with Gladstone, of a rich colour; Sea Eagle, and Lord Palmerston; Mr. NANCEY gr. to Mrs. DRUCE, Mersham, was 3rd.

One dish of one variety brought three exhibits.—Mr. MITCHELL, gr. to J. W. FLEMING, Esq., Chilworth, Romsey, was 1st with handsome Sea Eagle; Mr. Lane, gr. to Miss RIDGE, Egham, being 2nd with Stirling Castle; Sea Eagle coming 3rd from Mr. GOLDSMITH.

Three dishes of Nectarines, distinct, was represented by one lot only from Mr. HARRIS, of Eastnor, who had large Pine Apple, and Albert Victor.

There were five single dishes of Nectarines.—Samples rather small; Mr. STRUGNELL, gr. to the Right Hon. W. F. LONO, M.P., Rood Ashton, was 1st with Victoria; Mr. J. HILL having Pineapple; and Mr. BRADLEY, gr. to F. W. MARVEL, Esq., Byfleet, Surrey, was 3rd with Victoria.

Four dishes of Dessert Plums, distinct, five lots. Mr. FOLKE, gr. to E. A. STRACHAN, Esq., Hemel Hempstead, was 1st with Cox's Golden Drop, Cloth of Gold, Reine Claude, and Late Transparent Gage. Mr. J. WEST, gr. to Lord BRAYBROOK, Sadron Walden, was 2nd, with Violet Reine Claude Greengage, and Cox's Golden Drop. Mr. STAGNELL was 3rd.

One dish of Dessert Plums, one variety.—The best was fine Cox's Golden Drop, from Mr. WEST; Mr. TURBOTT coming 2nd with the same variety; Monarch, from Mr. LEWIS, being oddly placed 3rd. There were eighteen dishes.

Four dishes of Cooking Plums, distinct, five lots.—Mr. GOODACKER was 1st, with fine Pond's Seedling, Goliath, Archduke, and Monarch. Mr. C. SIM was 2nd; and Mr. J. DAY, gr. to the Earl of GALLOWAY, Carlisle, was 3rd.

One dish of Cooking Plums, one variety, brought eleven dishes; Mr. OSBORN, gr. to the Rev. H. GOLDING PALMER, Reading, being 1st.

Gage Plums, one dish.—The best Reine Claude came from Mr. MESSINGER; Mr. HERRIN coming 2nd with Brady's Greengage. Mr. GOLDSMITH was the only exhibitor of four dishes of Damsons, with ordinary varieties.

DIVISION IV.

COOKING APPLES.

Alfriston, of which there were seven dishes, led the way. Mr. J. MCKENZIE, gr. to F. S. W. CORNWALLIS, Esq., Linton Park, Maidstone, was 1st with very fine examples; Mr. G. WOODWARD, gr. to R. LEIGH, Esq., Barham Court, Maidstone, 2nd; and Mr. W. LEWIS, gr. to J. OLIVERSON, Esq., East Sutton Park, Maidstone, 3rd.

Beauty of Kent was represented by nine dishes. Mr. R. CHAMBERLAIN, gr. to T. M. LOWENSON, Esq., Cressingham Park, Reading, was 1st with finely finished fruit; Mr. G. WOODWARD, 2nd; and Mr. A. BASILE gr. to the Rev. O. L. POWELL, 3rd.

Bismarck was represented by eleven dishes. Mr. J. MCKENZIE was 1st with very fine fruit indeed, large, even, bright; Mr. G. WOODWARD came 2nd, smaller, but a perfect half-dozen and Mr. C. ROSE was 3rd.

Bramley's Seedling was represented by four dishes

good, the 1st prize going to Mr. C. A. Bayford, gr. to C. LEE CAMPBELL, Esq., Gleston Court, Ross, who had clean, bright, even fruit. Mr. S. Lyon, gr. to J. H. SALMON, Esq., Holly Bank, Rowton, Chester, was 2nd with large specimens, a little uneven; Mr. J. Hill, gr. to C. R. W. ADEANE, Esq., Babraham Hall, Cambridge, was 3rd.

Cellini Pippin.—There were thirteen dishes of this variety, all very bright in appearance, the 1st prize was taken by Mr. G. Goldsmith, gr. to Sir E. G. LODGE, Bart., Leonardale, Horsham, with fine, brilliantly-finished examples; Mr. C. A. Bayford was 2nd, also with an excellent lot, and Mr. J. Powell, gr. to Col. BRYMER, M.P., 3rd, with good fruit.

Cox's Pomona brought seventeen dishes, all finely-coloured fruits; Mr. J. McKENZIE was 1st with extra bright coloured specimens; Mr. J. POWELL was 2nd, and Mr. G. Goldsmith, 3rd, both showing this favourite in excellent character.

Duchess of Oldenburgh was represented by seven dishes of uneven character; the 1st prize was taken by Mr. JAMES COULTON, Dildawn Gardens, Castle Douglas, N.B., with examples that showed the type in its best character. Mr. T. W. Herbert, gr. to J. T. CHARLESWORTH, Esq., Nutfield Court, Redhill, was 2nd with rather larger but less perfect specimens; and Mr. G. Goldsmith 3rd.

Dumelow's Seedling brought sixteen dishes, all good, a few exceptionally fine. Mr. J. McKENZIE was 1st with superb fruits, large, even, bright; Mr. W. G. PRAGNELL, gr. to J. K. O. WINGFIELD DIGBY, Esq., Sherborne Castle, Sherborne, was 2nd, with very bright but less even specimens; and Mr. C. A. Bayford 3rd.

Ecklinville Seedling.—Of this there were fifteen dishes. Mr. J. McKENZIE taking the 1st prize with large even fruits of a bright clear yellow tint; Mr. J. SPOTTISWOOD, Queen's Park, Brighton, was 2nd, also with well finished examples; and Mr. G. Woodward a good 3rd.

Of *Emperor Alexander* there were ten dishes, large, bright, highly finished fruit, taking the leading prizes. Mr. J. McKENZIE was again to the fore with superb examples; Mr. G. Woodward was 2nd with smaller, but very bright Apples; and Mr. G. Goldsmith a close 3rd.

Frogmore Prolific was represented by six dishes, varying in character, doubtless owing to difference in locality. Mr. J. McKENZIE was again 1st, with very fine fruits; Mr. C. A. Bayford, 2nd; and Mr. W. G. PRAGNELL, 3rd.

Golden Noble brought twelve dishes, some especially bright in colour. Mr. G. CHAMBERS, Moorcocks Farm, Mereworth, Maidstone, was 1st, with very bright, clean even fruits, rather more conical in shape than is usually seen. Mr. G. Woodward, was 2nd, with bright fruit, a little uneven in size; and Mr. J. McKENZIE, 3rd.

Golden Spire.—There were six dishes. The best coloured and most even being from Mr. G. Woodward; an unusually fine lot of fruit. Mr. G. Goldsmith was 2nd; and Mr. W. Lewis, gr. to T. OLIVERSON, Esq., East Sutton Park, Maidstone, 3rd.

Grenadier was represented by three dishes only, so no exhibitor went empty away. Mr. C. HERRIN, gr. to Lady L. FORTESCUE, Dropmore, Maidenhead, was 1st; large, even well-finished fruit being staged. Mr. W. Lewis was 2nd; and Mr. J. HILL, 3rd.

Hawthornden (New).—Was represented by four dishes. Mr. G. Woodward coming 1st with very fine examples. Mr. A. Brooks, Latter's Farm, Mereworth, Kent, was 2nd, also very fine; and Mr. T. W. HERBERT was 3rd.

Horned's Pearmain brought two dishes only. Mr. J. McKENZIE was 1st with very fine fruit; and Mr. J. HILL 2nd, with much smaller examples, even and clean.

Lane's Prince Albert evidenced its growing popularity by being represented in 14 dishes; here Mr. C. Ross, gr. to Capt. A. J. CARSTAIRS, Welford Park, Newbury, was 1st with remarkably fine large and bright fruit. Mr. C. A. Bayford was 2nd also with fine Apples, though lacking the colour of Mr. Ross' fruit; and Mr. G. Woodward was 3rd.

Lord Derby.—Was also represented by very fine examples. 12 dishes being staged. Mr. G. Fennell, gr. to W. M. CAZALET, Esq., Fairlawn, Tonbridge, Kent, was 1st with highly-finished specimens. Mr. R. Edwards, gr. to G. N. FIELD, Esq., Beechy Lees, Sevenoaks, was 2nd with smaller but clearer and better-coloured fruits; and Mr. C. HERRIN was 3rd. One fine dish was labelled by the judges as "not Lord Derby."

Lord Grosvenor was shown in four dishes, Mr. G. Woodward coming 1st, with large, very bright, and perfect examples; Mr. C. HERRIN was 2nd; and Mr. F. Harris, gr. to Lady H. SOMERSET, Eastnor Castle, Ledbury, 3rd.

Lord Suffield brought fifteen dishes, varying in size. Mr. J. McKENZIE was again 1st, with really superb fruits, even, and very bright; Mr. G. Woodward was 2nd, also with very fine specimens; and Mr. R. Chamberlain, gr. to F. M. LONERGAN, Esq., Cressingham Park, Reading, 3rd.

Mère de Ménage was in very fine character. Mr. McKENZIE taking the 1st prize, with very large, even, highly-coloured fruit; Mr. C. Ross was 2nd, with little smaller but equally well coloured examples; and Mr. G. Woodward 3rd. There were seven dishes.

Northern Greening brought three dishes only. Mr. C. Ross was 1st, with good-sized, well-coloured fruit; Mr. A. Brooks was 2nd; the third prize was evidently withheld.

Newton Wonder was shown in two classes, in the first it was necessary the exhibitors lived in Cardigan, Radnor, Shropshire, Stafford, Warwick, Northampton, Bedford, Cambridge, Essex, or counties further north. Two dishes were staged: Mr. J. HILL, Babraham Hall, was 1st with very fine fruit; and Mr. H. H. HURNARD, Gurney Manor, Higham, Norfolk, 2nd with larger fruit, a few somewhat spotted. In the following class for the same variety from growers living south of the

foregoing counties: Mr. R. EDWARDS, Beechy Lees, was 1st with an excellent dish of even fruits; Mr. G. Goldsmith, was 2nd, with fruit showing more colour, even, and clean; and Mr. J. Harris, gr. to P. CROWLEY, Esq., Waddon House, Croydon, 3rd; there were four dishes.

Peargood's Nonsuch was represented by some stupendous specimens: Mr. J. McKENZIE taking the 1st prize with very large even, bright fruits; Mr. W. A. McKENZIE, gr. to the LORD BISHOP of Bath and Wells, the Palace, Wells, was 2nd, also with very fine apples; and Mr. F. G. POWELL, the Horticultural College, Swanley, 3rd; nine dishes were staged.

Potts' Seedling was represented by eleven dishes. Mr. T. Turton, gr. to J. HARGREAVES, Esq., Maiden Erlegh, Reading, was 1st, with very good examples; Mr. G. Woodward, was 2nd, also with very fine fruit; and Mr. J. Hudson, gr. to L. de ROTHSCHILD, Esq., Gunnersbury House, Acton, 3rd.

Royal Jubilee brought one dish only from Mr. C. Ross, but the fruits were a very good representation of the variety.

Saundersham was well represented by nine dishes; Mr. J. McKENZIE adding another to his successes, taking the 1st prize with a superb dish. Mr. G. Wythes, gr. to Earl PERCY, Syon House, Brentford, was 2nd, also with an excellent dish; and Mr. C. Ross, 3rd.

Spencer's Favourite, which is very like Golden Noble in appearance, was seen in four dishes, Mr. G. Woodward coming 1st with perfect fruit, yellow as a guinea; Mr. W. Jones, gr. to G. R. BROUGHTON, Esq., Wellington Bridge, Carshalton, was 2nd, with rather larger but not such well-finished fruit; and Mr. W. B. MILLET, gr. to T. W. STARTUP, Esq., West Fareleigh, Maidstone, 3rd.

Stirling Castle brought ten dishes varying in size; Mr. J. McKENZIE was 1st with a really perfect dish; Mr. W. Strugwell, gr. to the Rt. Hon. W. H. LOXO, M.P., Rood Ashton, Trowbridge, was 2nd; and Mr. W. King, gr. to J. COLMAN, Esq., Gatton Park, Reigate, 3rd.

Stone's or Loddington Seedling brought four dishes only, and here again Mr. J. McKENZIE was 1st with finely-matured fruit; no 2nd or 3rd prize appears to have been awarded.

The Queen brought bright-coloured fruits, and here again Mr. J. McKENZIE took 1st prize with a dish of large, even and bright Apples. Mr. G. Woodward was a good and close 2nd; and Mr. C. HERRIN, 3rd, his fruits being brilliantly-coloured.

Tower of Glamis was represented by eight dishes; Mr. J. McKENZIE was 1st with examples which left little to be desired, so perfect were they; Mr. A. Brooks, Mereworth, was 2nd, and Mr. C. A. Bayford, 3rd.

Tyler's Kernel was seen in three dishes, Mr. J. McKENZIE showing again very fine indeed, conical in shape, and perfectly finished; Mr. J. HILL, Babraham Hall, was 2nd; and Mr. A. Basile, gr. to the Rev. R. A. POWELS, Woburn Park, Weybridge, 3rd.

Warner's King was numerously represented, there being twenty-four dishes, some very fine. Here again Mr. J. McKENZIE came in 1st with a splendid dish—large, bright, even. Mr. G. CHAMBERS, Mereworth, was 2nd with large fruits not so freely coloured; and Mr. G. Woodward was 3rd.

In what might be termed a consolation class for any other variety there were seventeen dishes. Mr. J. McKENZIE coming 1st with a superb dish of Dutch Codlin finely coloured. Mr. W. Camm, gr. to the Duchess of CLEVELAND, The Abbey, Battle, Sussex, was 2nd with an admirable dish of Lady Henniker; and Mr. G. FENNELL, Tonbridge, 3rd with Castle Major. Manx's Codlin, Gloria Mundi, Councillor, Anne Elizabeth, Hollandbury, Belle Dubois, and others were staged.

DESSERT APPLES.

Adam's Pearmain was represented by seven dishes. Mr. W. Camm, gr. to the Duchess of CLEVELAND, The Abbey, Battle, was 1st, with regular, handsome specimens. Mr. G. Goldsmith, gr. Sir E. G. LODGE, Leonardale, Horsham, was 2nd, also with very good fruits; and Mr. G. Woodward, 3rd.

Of *Allen's Ever-ating*, three dishes only were staged: Mr. J. Powell, gr. to Col. F. YMER, M.P., was 1st, with well-coloured fruit. Mr. W. H. Godden, gr. to The Hon. F. W. BUXTON, Cashibury, Sawbridgeworth, was 2nd, with good fruit, lacking colour; and Mr. J. SPOTTISWOOD, Queen's Park, Brighton, was 3rd.

Baumann's Red Winter Reinette produced nine dishes, all finely coloured; Mr. J. McKENZIE, gr. to F. S. W. CORNWALLIS, Esq., Linton Park, Maidstone, was 1st with very fine specimens; Mr. C. Ross, gr. to Capt. A. J. CARSTAIRS, Welford Park, Newbury, was 2nd, having very fine fruit also; and Mr. H. C. PRINSEP, gr. to Viscountess PORTMAN, Buxted Park, Uckfield, was 3rd.

Cl Blenheim Orange there were seventeen dishes, Mr. W. H. Godden taking the 1st prize with large and bright fruits; Mr. G. CHAMBERS, Moorcocks Farm, Mereworth, Kent, was 2nd, with smaller but very handsome, bright fruit; and Mr. W. King, gr. to J. COLMAN, Esq., Gatton Park, Reigate, was 3rd.

Brownlee's Russet was represented by seven dishes, but one of them was labelled by the judges, Old Royal Russett. Mr. G. Woodward was 1st, having the type well represented; Mr. H. C. PRINSEP was 2nd; and Mr. A. H. RICKWOOD, gr. to the Dowager Lady FRAKE, Fulwell Park, Twickenham, 3rd.

Of *Claygate Pearmain* there were five dishes. Mr. G. Woodward was 1st, having this variety very fine; Mr. H. C. PRINSEP was a good 2nd; and Mr. W. H. Godden 3rd.

Court Pendu Plat was represented by fifteen dishes, some richly coloured. Mr. J. C. Tallack, gr. to E. DRESDEN, Esq., Livermore Park, Bury St Edmunds, was 1st, with very fine

fruits; Mr. C. Ross 2nd; and Mr. R. Chamberlain, gr. LONERGAN, Esq., Cressingham Park, Reading, 3rd. *Cox's Orange Pippin* was in force; twenty dishes being some finely finished. Mr. W. Messenger, gr. to BERNERS, Esq., Woolverstone Park, Ipswich, was large, even bright fruit, not so brilliantly coloured. Mr. W. KING, came 2nd with highly-finished fruit; and Mr. G. Woodward, was 3rd.

Egremont Russet brought two dishes only, Mr. SMITH, Leonardale, was 1st with very good exam. W. B. MILLER, gr. to T. W. STARTUP, Esq., West Maldstone, 2nd.

Fearn's Pippin was finely shown, fifteen dishes being, Mr. J. C. TALLACK was 1st with brilliant fruit, 1 very bright fruit; Mr. J. McKENZIE coming 2nd, at Jones, gr. to G. R. BROUGHAM, Esq., Wallington, Carshalton, 3rd, and like the preceding, finely finished.

Gascogne's Scarlet was represented by seven dishes showing off this brilliant Apple to the best advantage. J. McKENZIE was 1st, with grand samples. Mr. J. gr. to L. de ROTHSCHILD, Esq., Gunnersbury House, 2nd, and Mr. G. Woodward 3rd, both having very fine fruit.

King of the Pippins came to the fore in nineteen dishes. Mr. J. C. TALLACK was 1st, with fruits requiring to make them perfect examples. Mr. J. POWELL was 2nd, and Mr. C. A. Bayford, gr. to C. LEE CAMPBELL, Esq., Court, Ross, 3rd.

King of Tomkin's County brought fine dishes, vary what in appearance. Mr. T. Turton, gr. to J. H. HALL, Esq., Maiden Erlegh, Reading, was 1st with large, richly-coloured fruit; Mr. J. C. TALLACK was 2nd good dish indeed, but lacking colour; and Mr. J. H. C. W. P. ADEANE, Esq., Babraham Hall, Cambridge. Of *Mahbot's Pearmain* there were but two dishes. Mr. J. McKENZIE was 1st with excellent fruit; and PRINSEP, 2nd.

Mannington's Pearmain brought eight dishes. Woodward was 1st with very good specimens. McKENZIE was 2nd, and Mr. T. TURTON, 3rd.

Of *Margil* there were ten dishes, the 1st prize going to Woodward, with very bright specimens; Mr. J. J. was 2nd; and Mr. C. A. Bayford, 3rd.

American Mother was represented by six dishes. Bayford was 1st with conical, high-coloured fruit. McKENZIE was very close up as 2nd; and Mr. SMITH, 3rd.

Ribston Pippin brought twenty-two dishes; so fruit being wonderfully fine. Mr. G. Woodward was perfect examples; Mr. J. McKENZIE with fruit, only inferior, was 2nd; and Mr. C. A. Bayford, 3rd.

Scarlet Nonpareil produced seven dishes, but one was marked Ross Nonpareil. Mr. J. HUDSON came perfect fruits, very even and fine; Mr. C. Ross, 2nd good fruits, was 2nd; and Mr. J. HILL, 3rd.

Of *Starmer Pippin* there were nine dishes, Mr. PRAGNELL, gr. to J. K. D. WINGFIELD DIGBY, Esq., T. Sherborne, was 1st with remarkably good fruit. CHAMBERLAIN came 2nd, and Mr. C. Ross 3rd.

Williams' Favourite was represented by one dish, bright fruits, from Mr. J. Powell, gr. to Colonel M.P., Haslington House, Dorchester.

Worcester Pearmain was in force, nineteen dishes being staged. Mr. W. KING, Gatton, the 1st prize with grandly coloured fruit; Mr. G. V. was 2nd, and Mr. W. MESSENGER 3rd.

Any other Variety brought twenty-four dishes. McKENZIE was 1st with a dish of St. Edmund's very handsome golden fruit russet; Mr. G. GOLDSMITH was 2nd with finely coloured Gravenstein; and Mr. G. was 3rd with fine Washingtons. Wealthy, Beauty Allington Pippin, Parrotquet, Kentish Pippin, varieties were shown.

DESSERT PEARS.

Bergamotte Espéren.—There were eight dishes of Mr. J. POWELL, Islington House, was 1st, with an dish; Mr. C. Ross was 2nd, and Mr. G. Woodward 3rd. *Beurré Bosc* was represented also by eight dishes. Goldsmith was 1st, with very fine fruit; at Cotterell, gr. to Sir W. N. M. GEARY, Bart., Oxon, Tonbridge, 2nd; Mr. W. B. OSBORN, gr. to the PALMER, Holme Park, Reading, was 3rd.

Beurré d'Anjou brought one dish only, a very from Mr. G. Woodward.

Beurré Diel was in force, fourteen dishes being. Mr. G. Woodward was 1st, with some large and specimens; Mr. G. WYTHES was 2nd, also with a good fruit; and Mr. G. Goldsmith 3rd.

Beurré Dumont brought two dishes. Mr. G. V. again was 1st, with even, handsome fruits; and Mr. W. was 2nd, with riper Pears, but not so good in appearance. *Beurré Hardy* produced eight dishes. Mr. G. V. was again to the fore with splendid examples; PRINSEP was a remarkably good 2nd; and Mr. V. GER, Wolverstone Park, was 3rd.

Beurré Superfin was represented by eleven dishes. Woodward again 1st, with a very fine even dish. Goldsmith was 2nd; and Mr. John Webb, gr. WICK, Esq., Manor House, Horsham, 3rd.

William's Bon Chretien brought two dishes, one Mr. James Day, gr. to the Earl of GALLOWAY House, Garliston, N.B., was 1st, with very good fruit. *Comte de Lamy* brought three dishes only: Mr. was 1st. Mr. T. W. HERBERT, Nutfield Court, 2nd. G. Goldsmith, 3rd.

Conference secured five dishes. Mr. G. Woodward with an excellent representation of the variety.

Slogrove, gr. to Mrs. CRAWFORD, Gatton Cottage, Reigate 2nd, also with good fruit; and Mr. J. POWELL, 3rd.

There were six dishes of *Conseiller de la Cour*; Mr. J. O. TALLACK coming in 1st with very fine examples; Mr. A. BABLE, with good fruit was 2nd; and Mr. C. A. BAYFORD, 3rd.

Doyenné du Comice was represented by ten dishes, some very good; Mr. J. POWELL came in 1st with a superb dish; Mr. B. CALVERT, gr. to Col. ARCHER HOUBION, Bishops Stortford, was a good 2nd; and Mr. G. WOODWARD, 3rd.

Duchesse de Bordeaux.—There were but two dishes. Mr. G. GOLDSMITH was 1st; and Mr. G. WOODWARD, 2nd.

Durondeau was represented by eight very fine dishes. Mr. G. WOODWARD was 1st, with superb examples; Mr. W. G. FRAGNELL was 2nd; and Mr. W. COTTERELL, 3rd.

Entée Beurré brought seven dishes, Mr. B. CALVERT taking the 1st prize with handsome, even-sized fruit. Mr. G. WOODWARD was 2nd; and Mr. W. COTTERELL, 3rd.

Three dishes of *Emile d'Hayot* were staged; the best came from Mr. G. WOODWARD; Mr. W. STRONGELL, Rood Ashton, was 2nd; and Mr. G. GOLDSMITH, 3rd.

Fondante d'Automne was represented by four dishes. Mr. A. BABLE was 1st with a capital fruit; Mr. T. TURTON, 2nd; and Mr. G. GOLDSMITH, 3rd.

Fondante de Thérèse.—There were three dishes of this Pear. Mr. WOOD was again 1st with a perfect dish, Mr. W. MESSENGER was 2nd; and Mr. J. NICHOLSON, gr. to J. W. MELLIS, Esq., Sewardstone Lodge, Chingford, 3rd.

Glow Morpheus.—This was shown in fine character, Mr. J. POWELL taking the 1st prize; Mr. J. WOODWARD was 2nd with rather larger fruit, not so well finished; and Mr. B. CALVERT 3rd.

Out of thirteen dishes of *Josephine de Malines*, Mr. J. POWELL was 1st with a very even, handsome sample; Mr. T. W. HERBERT was 2nd, and Mr. B. CALVERT 3rd.

Louise Bonne of Jersey was represented by ten dishes, some of them brilliantly coloured; Mr. J. COLES, gr. to H. F. WALKER, Esq., Highley, Balcombe, Sussex, was 1st with superb examples; Mr. W. MESSENGER was 2nd; and Mr. G. GOLDSMITH 3rd.

Maria Bonnet brought three dishes. Mr. G. WOODWARD was 1st with very fine examples; Mr. G. MESSENGER was a very good 2nd; and Mr. G. WYTHES 3rd.

Maria Louise was in good character, ten dishes being staged. Mr. B. OSBORN took the 1st prize with very fine fruit; Mr. G. WOODWARD, only just beaten, was 2nd; and Mr. G. GOLDSMITH 3rd.

Maria Louise d'Ucle was represented by seven dishes. Mr. W. COTTERELL taking the 1st prize with large and highly-finished fruit; Mr. G. WOODWARD was 2nd; and Mr. G. GOLDSMITH, who had the largest but the greenest fruit 3rd.

Of *Marguerite Marillat*, two dishes only were staged, both very fine, and perfectly ripe. Mr. G. GOLDSMITH was 1st, and Mr. EDWARDS, Beechey Lees, 2nd.

There were five dishes of *Nouvelle Fulvie*. Mr. G. WOODWARD was 1st, with very fine fruit; Mr. G. GOLDSMITH 2nd; and Mr. G. WYTHES 3rd.

Olivier de Serres.—The best dish of this variety came from Mr. G. GOLDSMITH; Mr. G. WOODWARD was 2nd, and Mr. G. NICHOLSON 3rd. Four dishes were staged.

Palmatin Duchess was represented by twelve dishes of superb fruits. Mr. W. COTTERELL was 1st, with grand examples; Mr. G. WOODWARD 2nd; and Mr. C. HARRIS, gr. to O. A. SMITH, Esq., Hammerwood, East Grinstead, 3rd.

Sekle was represented by three dishes only; Mr. C. ROSS was 1st with a very fine sample, Mr. T. TURTON 2nd, Mr. F. HARRIS, Eastnor Castle, 3rd.

Two dishes only of *Succaire du Comice* were staged. Mr. G. GOLDSMITH was 1st with some very fine fruit, and Mr. G. NICHOLSON, Fairlawn, Tonbridge, 2nd.

Thompson's Pear was represented by five dishes. The best came from Mr. J. POWELL; Mr. W. COTTERELL was 2nd, and Mr. SLOGROVE 3rd. Mr. POWELL'S Pears were particularly fine.

Winter Nellis brought twelve dishes. Here again Mr. WOODWARD took the 1st prize, having superb fruit. Mr. GOLDSMITH was a good 2nd, and Mr. F. HARRIS 3rd.

Any other variety was represented by nineteen dishes, the 1st prize going to Mr. G. WOODWARD, for magnificent Gansel's Pergament; Mr. J. SPOTTISWOOD, Brighton, was 2nd, with *Doyenné Boursnois*; and Mr. G. GOLDSMITH 3rd, with *Rivers' Princess*. Madame Treyve, Brockworth Park, Duchess d'Angoulême, and Beurre Bachelier, with others, were shown in good character.

DIVISION V.

THE VEITCH PRIZES FOR FLAVOUR.

In the competition for flavour in Apples as many as forty-four dishes were staged. Mr. H. C. PRINCEP, was 1st with Ribston Pippin, finely-coloured fruits, firm yet ripe; Mr. C. PERRIN, gr. to Lady FORTESCUE, Dropmore, Maidenhead, being 2nd with Cox's Orange Pippin, which were scarcely ripe.

Thirty-two dishes of Pears were staged. Mr. B. OSBORN, gr. to Rev. H. GOLDING PALMER, Holme Park, Reading, was 1st with good examples of Louise Bonne of Jersey, in first rate condition; Mr. COTTERELL, gr. to Sir WM. GEARY, Bart., Tonbridge, with *Fondante d'Automne*, the examples being of medium size.

The Luncheon.

THE customary luncheon took place on Thursday in the Garden Hall. Sir Trevor Lawrence, President of the Royal Horticultural Society, presided, and among those present were Messrs. T. B. Haywood, P. Crowley, J. T. Bonnett-Poe and R. McLehlan (members of Council); Mr. J. T. Rait,

chairman of the Crystal Palace Company, Mr. W. Gardiner, Secretary; and Mr. H. Gilman, Manager; the Rev. W. Wilks, Mr. Arthur W. Sutton (Reading), Mr. G. Bunyard, Mr. Owen Thomas, and a number of representative gardeners.

The toasts of the Queen and the other members of the Royal Family having been enthusiastically honoured, the Chairman proposed "Prosperity to the Crystal Palace Company." He said the Royal Horticultural Society were deeply indebted to the Crystal Palace Company for the help they gave the fruit industry by supporting such shows as the present. One thing they ought not to forget, and that was that, while great progress had been made in every art and science during the Queen's reign, the fruit-growing art had not lagged behind. He wished the Crystal Palace Company every success. Mr. J. T. RAIT, Chairman of the Crystal Palace Company, responded. He said he and the directors were only too pleased to see the Royal Horticultural Society again holding their show at the Palace and hoped they would do so for many years to come. He expressed the hope that alterations that had been made in the arrangement of the central transept met with their approval.

With regard to the many rumours as to the alleged intended sale of the Crystal Palace, he asked them to look upon them as merely rumours, and nothing else. The company suffered considerably from the Jubilee, but it was satisfactory to know that their flag still floated on Sydenham Hill. It was the intention of the directors to continue to make the Palace worthy of the glorious traditions of the past. There certainly had been an attempt to induce the London County Council to buy the Palace, but beyond that, the rumours were worth nothing. He always held that the Palace should be a national institution, but as long as it remained under its present conditions, the company looked for the generous support and sympathy of the public.

The Chairman next proposed "The Judges," and referred to them as the finest body of experts in matters of fruit growing in the kingdom. As to the Crystal Palace Company, he agreed with Mr. RAIT that it should be a National Institution.

Mr. OWEN THOMAS, The Queen's Gardener, responded.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

SEPTEMBER 23.—Present: G. Shorland Ball, Esq., Ashford, in the Chair; also Messrs. S. Gratrix, Westhams, Greenwood, Johnson, Captain Schofield, Jas. Anderson, W. A. Gent, Wm. Bolton, and E. J. Sidebotham.

From H. H. BOLTON, Esq., Heighside, Newchurch (gr., Mr. Eastwood), came *Calanthe* × *Eclipse* = *Sanderiana* × *veratrifolia*, an interesting but ineffective cross; also a good *Cattleya speciosissima*, a bright-lipped *Cattleya aurea* (Award of Merit).

G. SHORLAND-BALL, Esq., Ashford, Wilmsham (gr., Mr. A. Hay), showed the beautifully-coloured *Vanda Kimballiana* (Award of Merit); also a very pale form of *Odontoglossum Bictoniense* (Award of Merit).

W. H. ALMOND, Esq., Almscar, near Blackburn, had a fine fresh-looking plant of a good form of *Miltosia Morelliana*, which was voted an Award of Merit.

WM. THOMPSON, Esq., Walton Grange (Mr. Stevens, gr.), sent a fine cut spike of *Odontoglossum acceptrum* which seems to be in some way allied to *O. luteo-purpureum*.

SAMUEL GRATRIX, Esq., West Point, Whalley Range (Mr. D. McLeod, gr.), sent *Cypripedium* × *Lowergremmii* = *Spiracanthum* × *logrande*, which received an Award of Merit, but the committee doubted the correctness of the alleged parentage, and the plant, when flowering next time, should be again brought before it. The same exhibitor had *Cypripedium* × *Callo Rothschildianum*, which was thought to resemble Lord Derby, a variety already certificated. It differs, however, in the arrangement of the petals. This exhibitor had also *O. × memoria Mossii*. An Award of Merit.

THOMAS STATTEN, Esq., Stand Hall, Manchester (Mr. R. Johnson, gr.), had a very good cross of *Cypripedium Stonei* × *Rothschildianum*, bearing the narrowish segments of both parents, as well as a good ground-colour and pretty spotting. It was not named.

JOHN LEMANN, Esq., West Bank House, Winton-Mersey (Mr. Edge, gr.), had the beautiful *Phaius Ashworthii* × *P. Maurel* × *P. maculata*, a fine yellow flower with a tasseled lip—a very striking novelty. It received an Award of Merit.

WM. BOLTON, Esq., Wilderspool, had a choice group nicely flowered, consisting of a plant of *Cattleya superba* with six flowers on a spike, and a pretty-coloured variety of *C. Eldorado splendens*; also a finely-formed and coloured *C. gigas Sanderiana* (Award of Merit); *Cattleya Schofieldiana*, a large flower, nicely spotted, received an Award of Merit while another one with a crowd of flowers upon it received a Cultural Certificate.

The Ven. Archdeacon RAWSTORNE, Balderstone Grange, Blackburn showed a splendidly-grown plant and variety, with over a dozen flowers, of the rather scarce *Miltosia Morelliana atrovirens*. The size, form, and finish of this remarkable variety impressed the committee, and they awarded it the only First-class Certificate of the day.

JOHN LEMANN, Esq. (Mr. Edge, gr.), had a group of freely-flowered Orchids set amongst Maidenhair Ferns, which relieved the monotony of the single exhibits at the time of the year when there is no wealth of Orchid-flowers, of *Odontoglossum crispum*, grande, and other *Odontoglossa*, *Cattleyas*, and a good assortment of the inmates of the cool and warm houses. He was awarded the Silver Medal of the

Society. A pleasing design in Orchid-flowers with a portrait of Darwin on the obverse was shown by this exhibitor. There has been no Gold Medal, which is a facsimile of the Silver one, made up to the present. It is a matter of congratulation to take the highest award of this Society. J. A.

BOTANIC GARDEN, OLD CALABAR.

THE following is an extract from a letter received from Mr. John Henry Holland, whose appointment as Assistant-Curator of the Botanic Station in the Niger Coast Protectorate was announced in the *Kew Bulletin*, 1896, p. 147.

"The gardens are well situated, on rising ground, covering altogether about 45 acres. This includes a large area planted with Coffee, a small proportion with Cocoa, whilst experimental grounds and nursery occupy the remaining part. There is, I can assure you, plenty to do.

"The quarters are good, situated conveniently in the gardens, on a hill about 160 feet high. We have not a very extensive view of the surrounding country, being partly enclosed with dense bush. We can, however, see Duke Town at the foot of the hill, and catch a glimpse of the river, with an occasional sight of a steamer passing by to the anchorage."

THE BULB GARDEN.

IXIAS

are admirable plants for pot-culture for greenhouse-decoration in the spring, and the bulbs may be potted at this season, putting eight or nine bulbs in a 6-inch pot, using sandy loam and leaf-soil, and placing them in a cold pit, where they may remain till in flower. The graceful flower-sprays of the different varieties have a nice effect when placed amongst other plants, or in jardinières and vases.

WATSONIA ROSEA

has long and handsome flower-spikes, and the plant is suitable for conservatory-decoration in the early summer months, if treated somewhat similar to the early varieties of *Gladiolus*. J. Baxter.

Obituary.

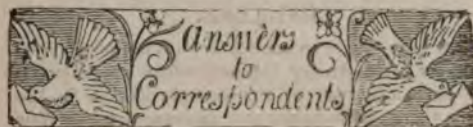
F. E. MCALLISTER OF NEW YORK.—We read in the *Florist's Exchange* of the death, on Tuesday, September 14, of Mr. F. E. McAllister, for twenty-five years carrying on an extensive seed and importing business in New York, his specialties being flower, field, and garden seeds, bulbs, implements, and sundries. The deceased was 53 years of age.

MR. J. H. CLEMENTS.—It is with regret that I have to record the death of Mr. J. H. Clements, at Brambling House Gardens, Chesterfield, on Sept. 22, at the age of fifty-five. A Kentish man by birth he went through the usual course of instruction in good establishments, going from a place in Worcestershire, to Mr. M. Dunn, at Dalkeith Palace Gardens, and thence to take charge of the gardens at Whittington Hall, Chesterfield, where he made numerous improvements while in the employ of the late W. Fowler, Esq. At the death of Mr. Fowler, fourteen years ago, he went to take charge of the gardens then being formed at the new residence of T. P. Wood, Esq., Brambling House, and with an employer liberal and enthusiastic in horticultural matters, Mr. Clements found a suitable sphere for his abilities in the forming and planting of artistic rock-work in a large house for Palms, Ferns, &c., besides houses for other plants and fruit, and a large show-house for Chrysanthemums. A cold, taken a fortnight ago, followed by pneumonia, was the cause of his untimely end. Mr. Clements was well known and respected by a wide circle of friends. W. Parks, Whittington Hall Gardens, Chesterfield.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

THREE CROPS OF FLOWERS FROM CATHERINE MERMET ROSE IN ONE YEAR IN DENMARK.—Can any of our readers inform A. J. S. if such an occurrence is usual.



A GOOD MARKET TOMATO: H. E. T. Try Young's Eclipse or Frogmore Selected.

BASKET WILLOWS: J. A. For strong work, *Salix conformis*, the shoots grow from 7 to 10 feet long, will do well on wet soil; a good coppice wood, the wood being pliable and tough. *S. purpurea*, a fine quality of Willow, rods straight and long, a good cropper on rich land, shoots tough and pliable, and leaves bitter, making it distasteful to stock—excellent for fine basket work. *S. Hoppeana*, a French Willow, shoots 5 to 7 feet long, may be used peeled or brown. *S. Helix* (Rose Willow), used for the best small work. Grows best on warp land; on strong land it is short and scrubby.

BOOKS: E. C. C. W. You should obtain Mr. Williams' *Orchid Manual*, published by B. S. Williams & Son, Paradise and Victoria Nurseries, Upper Holloway, N.

CARNATIONS AND PINKS: X. The first have originated from *Dianthus caryophyllus*, and the second from *D. plumarius*. Numerous crosses have been raised between most diverse species, and between crosses, consequently the characteristics in regard to form and colour of the flowers are not traceable. Some hybridists have regarded the garden Pink as having descended from *D. caryophyllus*, and not from *D. plumarius*. Pinks are distinguished from Carnations by their dwarfer habit, narrower leaves, more decidedly perennial character, pungent balsamic fragrance, and their capability of being propagated by division of the root.

CHALLENGE BOILER: E. R. B. We are unable to give the name of the maker. We do not find the name you mention as a boiler maker in London, or in the country with an office in town. You should advertise in our columns.

CORDYLINES (DRACENAS): T. G. H. Such root-stocks as those sent could not be expected to bear healthy free growing heads. Strike fresh tops, and when they are free of the old cankered base, they will thrive satisfactorily.

FIGS: W. H. H. To prevent the fruits falling prematurely from out-of-door Fig trees, direct your efforts to obtain a thorough ripening of the wood each autumn. If the tree is growing too strongly you must root prune. Never stop a shoot unless it is uncommonly strong. Keep the tree thinly upon the wall by removing each season as many shoots as may be necessary. When root pruning, you had better examine to see if any of the roots are too far from the surface of the soil. They should be kept very near to the surface, and covered during winter and spring at least with a mulch of short manure. Some growers pinch the shoots in summer to effect ripening; you might try this method upon another tree, and note the result.

FUNGUS ON BLACK CURRANT LEAVES: C. E. T. The leaves are affected by the *Uredo* of *Cronartium ribicola*, the ascidium stage of which affects the bark of *Pinus strobus*. The disease, as it appears on the leaf of the Currant, is figured in the *Gardeners' Chronicle*, vol. xii., 1892, p. 135, and described at pp. 44 and 133 of the same volume. Every leaf, and all the prunings, should be collected and burned, and the ground under the bushes skimmed and buried deeply. Afterwards dress the trees repeatedly with the Bordeaux Mixture. It is apt to infest the other members of the *Ribes* family.

FUNGUS ON GRAPES: C. S. Certain atmospheric conditions favour the growth of moulds, and you can only take such precautions against them as the use of flowers-of-sulphur in combination with whitewash on the hot-water apparatus, keeping

sulphur in saucers of water, and using the Bordeaux Mixture in a mild form on the foliage twice or thrice during the summer, also damping the floors and walls with the same. Avoid coolness and dampness in the vineries at all times.

GRUBS: W. Lewis. The common Leather-jacket, the larvæ of the Daddy-longlegs—*Tipula oleracea*. Injurious to the roots of plants when present in great numbers in the soil. Repeated digging of the soil, and exposing it to the birds and the weather, will rid the land of them.

LILIAM CANDIDUM: S. S. D. It is quite natural for this species to make a tuft of leaves in the autumn. Do not disturb them, they gain in strength if let alone.

MUSHROOM: J. C. & Co. It is the Horse-Mushroom, *Agaricus arvensis*, and very good eating. Flavour rather stronger than that of *A. campestris*. M. C. C.

NAMES OF FRUITS.

* * Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruit. Delay in any case is unavoidable.

C. A. B. 1, Winter Pearmain; 2, Gravenstein; 3, Roundway's Magnum Bonum; 4, Baumann's Red Winter Reinette; 5, Lemon Pippin.—Thomas Kimble. Worcester Pearmain.—H. T. 1, Beurré Diel; 2, Comte de Lamy; 3, Duchesse d'Angoulême; 4, Beurré Diel; 5, Gravenstein.—T. E. 1, Doyenné du Comice; 2, Louise Bonne of Jersey; 4, Napoéon. Apples: 1, Fern's Pippin; 2, Court of Wick; 3, Cox's Pomona; 4, Not recognised.—W. 1, Beurré Clairgeau; 2, Doyenné Boussoch; 3, Catillac; 4, Not recognised.—Jane Eyre. Small variety resembles Sussex Duck's Bill; large, Yorkshire Beauty.—C. Best. 1, Beurré Sterckmann; 4, Easter Beurré; 5, Catillac; 9, Autumn Bergamot; 3, Beurré d'Amanlis; 8, Thompson's; 7, Beurré Diel.—Roberts. 1, Duck's Bill of Sussex; 2, Not known; 3, Bleuheim Orange; 4, Cellini Pippin. The Pear was not in perfect condition.—C. Roskill. 1, Windsor; 2, Beurré d'Amanlis; 3, Hawthornden; 4, Not known; 5, Ribston Pippin; 6, Court of Wick.—T. B., Esher. 1, Cox's Pomona; 2, Lemon Pippin; 3, Not recognised.—Subscriber. 1, Beurré Hardy; 2, Beurré Bachelier; 4, Beurré Bosc; 5, Lord Grosvenor.—St. Andries. 1, 3, Old Pearmain; 2, Lane's Prince Albert; 5, Not known; 4, Edmund Jupp; 6, Hawthornden.—James Hughes. 1, 3, Not recognised; 2, Bass Pool; 4, Emperor Alexander; 6, Ecklinville; 5, Cellini.—J. H., varieties in sealed packages. 1, 3, Holland bury; 2, Gloria Mundi; 4, Allriston.—Robert King, per M. C. K. Your Pear is correctly named, Beurré Bachelier.—X. Y. Z. 1, Golden Pippin; 2, Frogmore Prolific; 3, Lord Derby; 4, Nonsuch; 6, Gloria Mundi.—C. J. Wilson. 1, Claygate Pearmain; 3, Knight's Monarch; 4, Passe Colmar; 6, Louise Bonne of Jersey; 2, Flemish Beauty and Dandelion's Seedling; 7, Col. Vaughan.—G. N. 1, Emperor Alexander; 2, Gloria Mundi; 3, Not recognised; 4, Ecklinville; 5, Duchesse; 6, Pear Beurré Hardy. (Thanks for P.O. for Gardeners' Orphan Fund).—W. P. R. The Pear is the Summer Franc Real, an abundant cropping, poor flavoured variety that may be eaten off the tree, or soon after gathering it.—W. J. B. Your specimens we are not certain of. Names shall be given next week.—Frank Ballingel. Pear pretty enough, but worthless. Flesh dry like a piece of wood.—A. M. Beauty of Kent. M. J. K. Resembling the Windsor, but bruised a good deal.—J. Russell. Red or crimson, Caraway Russet, Damson Crittenden.—J. A. Edgar. 1, Golden Noble; 4, Mère de Ménage; 9, Mère de Ménage; 6, Lord Derby; Ribston Pippin; 5, Hanwell's Souring.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—M. Outhbertson. 1, *Geranium sylvaticum*; 2, *G. phœnum*; 3, *Hypericum tetrapterum*; 4, *Astilbe chinensis*.—J. R. H. *Oncidium microchilum*, a species which bears a strong resemblance to *O. splendens* in its habit of growth.—A. T. C. 1, 2, 5, 6, 7, garden-raised variations of *Adiantum cuneatum*; 3, *Adiantum decorum*; 4, *Adiantum cuneatum*; 8, *Pteris tremula*; 9, *Pteris serrulata*; 10, *Pteris argyrea*.—F. C. 1, *Croton interruptus*; 2, *Croton Johannis*; 3, *Croton trilobus*; 4, *Croton elegans*; 5, Probably

small leaf of *C. Weissmanni*; 6, *Croton variegatus*; 7, *Tecoma australis*.—J. G. The Orchid is *Catasetum Trulla*; the other *Passiflora edulis*.—East Fairleigh. *Stanhopea Wardi aurea*, and *Odontoglossum biconense*.—X. Y. Z. 1, *Rhus typhina*; 2, *Cereus serpentinus*; 3, *Phyllocactus* sp., no flower; 7, *Achillea ptarmica*, double var.—W. C. 1, *Aralia chinensis*; 2, *Acauthus mollis*; 3, *Hydrangea hortensis*, garden var.; 4, *Cornus alba*, var. *Spethii*.—W. T. Johnson. 1, *Polygonum vacinifolium*; 2, *Commelina coelestis*; 3, *Scolopendrium vulgare*, one of the crested forms; 4, 5, 6, *Acer palmatum*, garden vars.; 4, being var. *dissectum*.—W. Thomson. 1, *Atriplex patula* 2 and 3, *Chenopodium rubrum*.

PEAT MOSS LITTER AND AZALEAS: B. B. Too spongy and absorbent of moisture, and we greatly doubt if the plants could be maintained in health in this material.

SIX SPECIES OF CONIFERS FOR PLANTING IN THE THAMES VALLEY: G. T. *Juniperus virginiana* (Red Cedar), *Pinus resinosa* (Red Pine of Canada), the Douglas Fir, *Picea excelsa* (common Spruce), *Tsuga* (*Abies*) *canadensis* (Hemlock Spruce), *Picea Menziesii*, *Sequoia sempervirens* (Redwood). These are fast growers, doing well in alluvial soils, provided there is no stagnant water. Only numbers of the trees planted together in woods or large clumps, would have any perceptible fragrance, unless the needles are rubbed or trodden under foot.

THE DROPPING OF THE SECOND CROP OF FIGS: B. B. In the absence of any information as regards the method of culture pursued, we can only guess the cause. Perhaps the temperature was unduly low at night, or cold water may have been applied at the root, or you may not have made use of bottom-heat. Figs in pots, and carrying fruit, are the better for being plunged in a hot bed of leaves or tan having a temperature between 65° and 70°.

TOMATOS: Dr. W. The fruits were solid and well flavoured, and if the plants crop abundantly, the small size of the former is no disadvantage.—T. & Both fruit and foliage are attacked by fungus, though different ones. Remove and burn the fruits as soon as you observe any are affected, and cut off all foliage that show any symptoms of disease. If this does not check its spread, remove the whole plant as soon as attacked.

TOMATOS AND ARTIFICIAL MANURE: H. E. T. Every 100 lb. of Tomato fruit takes from the soil about: nitrogen, 2.2 oz.; phosphoric acid, 0.9 oz.; potash, 4.6 oz. The nitrogen is equivalent to 14 oz. nitrate of soda. The phosphoric acid is equivalent to 5 oz. of dissolved bone-black. The potash is equivalent to 10 oz. of muriate of potash.

WIRE NETTING AND BUSH FRUITS: H. Hopkins. We do not believe that the drip will kill the bushes any more than would the rain. The drip will only occur for a short time after a shower. It is more likely that by preventing the small insect-feeding birds from approaching the bushes, the evil invited will be far greater than that you avoid, and both bushes and ground become infested with worms and insects in variety. If you put up the wire protection, the sides should be left open at such time as the bud-destroying and fruit-eating birds can do no harm to the bushes.

COMMUNICATIONS RECEIVED.—J. R.—W. M.—J. A. E.—M. J. K.—F. B.—J. T. R.—A. Constant Subscriber.—H. R.—S. C.—F. G. G.—B. & Sons.—M. D.—E. C.—E. W. R.—L. B.—H. E.—D. T. F.—L. H. B.—Othura.—J. de la B.—W. C.—H. N. E.—Agricus.—A. P. H.—C. B.—G. P.—Allerton.—C. W.—R. D.—J. R. B.—J. B.—J. R. L.—W. W.—T. F.—W. H.—W. Collins.—L. A. B.—J. C. & Co.—J. B.—W. T.—H. J. M.—J. J. L.—P. O. P.—J. J. F.—Meinlin, next week.—Col. B.—H. Correvon.

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper,

MORE THAN DOUBLED, and that it continues to increase weekly.

Advertisers are reminded that the "Chronicle" circulates among COUNTRY GENTLEMEN, and ALL CLASSES of GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is preserved for reference in all the principal Libraries.

(For Markets and Weather, see page 12.)



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 9, 1897.

THE MANURING OF VEGETABLES AND HOPS.

THE members of the Permanent Nitrate Committee recently paid their annual visit of inspection to the Market Garden Experimental Station conducted by Dr. Bernard Dyer, under the executive supervision of Mr. F. W. E. Shrivell, F.L.S., on the Hop-farm of the latter at Golden Green, near Hadlow, Kent.

The station has now been established for four years, under a grant made by the committee, and the crops under experiment include several varieties of Cabbages, Brussels Sprouts, Cauliflowers, Broccoli, early and late Potatoes, Spinach, summer and winter Lettuce, summer Onions, Tripoli Onions, Leeks, Asparagus, Beetroots, Carrots, Parsnips, Jerusalem Artichokes, Globe Artichokes, Celery, Rhubarb, Strawberries, and Hops.

The experiments were devised by Dr. Dyer, at the request of the committee, in order to enable a satisfactory answer to be given to the question as to how far and under what circumstances nitrate of soda can be best and most profitably used as an adjunct to market gardening and Hop-farming, and how far it might aid in economising the dung of the farm, or in replacing the frequently enormous quantities of town dung purchased by market-gardeners. Six plots are devoted to each kind of vegetable under experiment. In every case one plot is annually dunged with fifty loads of London dung per acre, without artificials; while a second plot receives twenty-five loads of London dung per acre, also without artificials. Three other plots also receive the minor dressing (twenty-five loads per acre) of London dung, but this in each case is supplemented by phosphatic-manure and nitrate of soda, the dressings of the latter varying from 1 to 4 cwt. per acre; one half of each plot is also treated with potash salts. A sixth plot receives no dung, but is manured with phosphatic-manure and 4 cwt. of nitrate of soda per acre, one-half of this plot also being manured with potash salts. If the sub-division into potash and non-potash plots be taken into account, we thus have really ten experimental plots devoted annually to each vegetable. Every plot is annually treated similarly with regard to manuring, but a proper rotation of cropping is observed.

FARMYARD MANURE.

Dr. Dyer considers it desirable to accumulate further experience on a subject so altogether new, particularly as three out of the four experimental years have been marked by prolonged drought during a portion of the growing season, and he wishes to get

a better average of seasons before formulating specific directions based upon the experiments. Both he and Mr. Shrivell, however, are emphatic in stating that the general result of the experiments throughout was to show that the heavy dunging commonly practised by market-gardeners is altogether a mistake, being far too costly in proportion to the results obtained. They are convinced from their experience that it is in every way far more profitable to use, at most, half the quantity of dung ordinarily used, and to supplement it by artificial fertilisers. Indeed, in the case of the crops which have been least influenced by the dry weather, the most economical way has been found to be to dispense with dung altogether, relying entirely upon artificials, such as superphosphate or basic slag, and nitrate of soda and potash salts in suitable combinations; and they repeated the opinion they have formerly expressed that the only feature which renders the use of dung economically desirable is its mechanical action in helping the soil to hold moisture better than where dung is not applied. This mechanical property is of material assistance in dry weather, and on this account alone they consider that market-gardeners would be unwise to dispense with the use of dung, but so far as mere fertilising properties are concerned, they repeat their opinion expressed in former years, that, as a mere source of plant-food, dung is both expensive and inferior to artificial manures. They therefore recommend that in market-gardening the use of dung should be greatly reduced, and the use of artificial fertilisers largely increased.

NITRATE OF SODA.

The effect of nitrate of soda in conjunction with phosphates has perhaps been most marked on the various crops of the Cabbage kind, but there are few crops on which it has not produced remarkable and highly remunerative results. During the past summer the use of a moderate dressing (25 loads per acre) of dung, when supplemented by phosphatic-manure, potash salts, and 4 cwt. of nitrate of soda per acre, gave nearly 12½ tons per acre of sound, marketable Tripoli Onions, whereas a double dressing of dung (50 loads per acre) without artificials, produced less than 9½ tons; 25 loads of dung per acre without artificials produced only 8 tons per acre. While, on the other hand, the use of the extra 25 loads of dung only raised the yield by less than 1½ ton per acre, the use, on the other hand, of artificials in its place gave an increase of more than 4½ tons of Onions per acre. The use of a light dressing of dung in conjunction with artificials therefore gave a better result by 3½ tons per acre than was produced by heavy dunging, while the cost of the artificials was not much more than half that of the extra dung. Even on the plot on which half the quantity of nitrate was used, the yield was 1½ tons more than was obtained by heavy dunging. On the plot on which chemical fertilisers only had been used for four years in succession, without any dung at all, the yield was, notwithstanding a dry season, heavier than on the plot receiving the double dressing of dung, while the chemicals only cost something like £3 an acre, whereas the heavy dressing of dung cost £10.

STRAWBERRIES.

Referring to some of the other results obtained during the current season, Dr. Dyer points out that the best Strawberry plot gave an extraordinary yield viz., at the rate of well over 3 tons per acre. This produce was obtained on the plot annually dressed with artificials including 2 cwt. of nitrate of soda per acre, together with phosphatic manure (superphosphate or basic slag) and twenty-five loads of dung per acre. The plot dressed with twice the quantity of dung, without artificials, gave less by nearly 1 ton per acre, so that the artificials may be said in this case to have produced about 1 ton of Strawberries per acre.

The plot on which the larger dressing of dung was used gave a much smaller crop than that dressed with the smaller quantity of dung. The results of this experiment so far seemed to show that 2 cwt. of nitrate of soda per acre (together with phosphatic

manure and a moderate quantity of dung) is as much as can be advantageously given to Strawberries, the use of a larger quantity having perhaps caused a larger development of plant, but without producing so large a yield of fruit. With a dressing of 2 cwt. per acre no difference was found between the keeping-qualities of the fruit, as compared with that grown from moderate dung alone; nor was the very large increase obtained accompanied by any deterioration in flavour.

RHUBARB.

In the case of Rhubarb, the use of chemical fertilisers in conjunction with dung has, in the small or fine varieties of the plant, nearly doubled the crop, as compared with that obtained by dung alone, and even where chemical fertilisers, including 4 cwt. of nitrate of soda were used without dung, the yield was greater than that obtained by the double dressing of dung without the aid of artificials. In the case of the grosser varieties of Rhubarb, the proportionate increase was not so great, but the liberal use of chemical fertilisers raised the crop by 50 per cent., as compared with dung alone.

ASPARAGUS.

The use of nitrate of soda on Asparagus has proved highly remunerative, particularly on those plots on which potash salts have been used, in addition to phosphates. The judicious use of artificial fertilisers, in conjunction with dung, has doubled the weight of produce, the advantage being found not only in a very large increase in the number of heads cut, but also in their size and thickness. Almost equally interesting results have been obtained from most of the other crops experimented upon, and before very long Dr. Dyer hopes to draw many practical generalisations from the experiments, not merely as to the utility of artificial nitrogen and phosphates, but also as to the effect upon the various crops, of potash, a constituent with regard to which, on the same soil, some of the crops—notably those of the Cabbage kind—appear to be utterly indifferent, while on some other crops the effect is extraordinarily marked.

HOPS.

At this season of the year, however, the plots which attracted most attention were the Hop plots (then in course of being picked), where the plan of manuring is somewhat different.

An acre of Hops in one of Mr. Shrivell's Hop-gardens has been for the last three years divided into a number of plots, of which six have for the last two years received no dung whatever, but merely a mixture of artificials. In 1896, they received 8 cwt. per acre of superphosphate and 2 cwt. per acre of muriate of potash, supplemented by varying quantities of nitrate of soda; while during the present year they received 10 cwt. of basic slag per acre and 2 cwt. of sulphate of potash, also supplemented by quantities of nitrate of soda varying from nothing up to as much as half a ton per acre. A neighbouring plot was manured with dung only at the rate of thirty-three loads per acre. Dr. Dyer has now furnished the results of the experiments on the crop just obtained, which are as follows:—

Plot.	Manure per Acre, 1897.	Weight of Kiln-dry Hops per Acre.
A.	Basic slag, 10 cwt. Sulphate of potash, 2 cwt. Nitrate of soda, none.	Cwt.
B.	Basic slag, 10 cwt. Sulphate of potash, 2 cwt. Nitrate of soda, 2 cwt.	7½
C.	Basic slag, 10 cwt. Sulphate of potash, 2 cwt. Nitrate of soda, 4 cwt.	12
D.	Basic slag, 10 cwt. Sulphate of potash, 2 cwt. Nitrate of soda, 6 cwt.	13
E.	Basic slag, 10 cwt. Sulphate of potash, 2 cwt. Nitrate of soda, 8 cwt.	13½
F.	Basic slag, 10 cwt. Sulphate of potash, 2 cwt. Nitrate of soda, 10 cwt.	13
X.	33 loads dung only.	8

It will be seen that the use of nitrate of soda was profitable up to the extent of 8 cwt. per acre. On Plot F. the larger dressing of 10 cwt. per acre has not increased the yield further. It is to be noted that this is the third year in succession in which these plots have received similar dressings; and no doubt many Hop-farmers will learn with some surprise that as much as half a ton of nitrate of soda per acre can be used on the same ground for three years in succession without injuring the quality of the Hops. Last year the general growth of Hops was, as elsewhere, much more prolific, and plot A (which received no nitrate of soda, and no nitrogenous manure except what survived from the dung applied in an earlier season), yielded as much as 13½ cwt. of Hops per acre; and the use of nitrate of soda was able to increase this yield only as far as 16½ cwt. per acre. This result was obtained by the addition of only 2 cwt. per acre of nitrate, and any increase of nitrate last year failed to tell further on the weight of the crop.

This year, on the contrary, when the general growth of the crop was much less free and abundant, the increase obtained by the use of nitrate has been progressive throughout the series. Thus the 2 cwt. of nitrate produced a gain of nearly 2 cwt. of Hops, 4 cwt. of nitrate a gain of 4½ cwt. of Hops, 6 cwt. of nitrate a gain of 5½ of Hops, and 8 cwt. of nitrate a gain of 6 cwt. of Hops, after deducting in each case the quantity produced merely by the phosphates and potash, and by the previous dunging of the soil.

Some experiments on the manuring of a Nut plantation are also in progress.

NEW OR NOTEWORTHY PLANTS.

CATTELEYA SCHOFIELDIANA GIGANTEA ×
= *C. GRANULOSA* × *C. GUTTATA*
LEOPOLDI (nat. hybr.).

THERE is a considerable number of *Cattleya Schofieldiana* to be found all over the country, many of them of the ordinary type, but the subject of our illustration (fig. 75, Supplement) with the affix *gigantea* is an improvement, and one that is worth figuring in the columns of the *Gardeners' Chronicle*. It is a natural hybrid, bearing the character of the seed-bearing parent, *C. granulosa*, with the very prominent spotting of *C. guttata* Leopoldi. The form of the segments, particularly the petals, is like the shape of the moon about the end of the first quarter, each limb in form like a scimitar. Measured across the petals, the flowers had a width of 6½ inches, and measured from the top of the dorsal sepal to the end of the lip it is 5½ inches. Length of sepal is 3½ inches, and breadth 1½ inch. Length of petal is 3½ inches, width 1½ inch. The whole segments are of rich cinnamon-ground colour with a yellow margin. The crowds of orbicular spots approach a cerise tint. The petals are enlivened with a shade of reddish-purple, flushing over the cinnamon ground-colour, which contrast well with the pale yellow edging. The length of the lip is 2½ inches. The convolute portion is bluish-white, the blade contracts in the middle like that of *Leopoldi*, is crimson-shaded and lined, and the extremity of the lobe is white. That part of the convex-column seen through the orifice of the lip is yellow. The peduncle was four flowered, but the plant, when cultivated properly, is sure to yield more flowers. It is a vigorous grower, although that cannot be said of the type generally. The principal merit of the flower consists in its size and its vivid colouring, excelling *Cattleya Queen Victoria* (see *Gardeners' Chronicle*, 1892, pp. 808, 809), which variety has no spotting. Capt. Schofield tells me that the plant which flowered in his collection, and was named after him, got less and less every year until it disappeared.

Samuel Gratix, Esq., West Point, Whalley Range, Manchester (Mr. R. McLeod, gr.), to whom we are indebted for this illustration, is the fortunate possessor of the plant, *J. A.*

EUCRYPHIA CORDIFOLIA, Cavanilles.

This beautiful Chilean shrub, which we believe has flowered for the first time in this country during

the past summer, belongs to a genus which has been referred to several natural orders; Bentham and Hooker in the *Genera Plantarum* place it in Rosaceae; there are but four species. *E. pinnatifolia*, also a native of Chili, is figured in the *Botanical Magazine*, t. 7087, and has also been figured in these columns. This latter is apparently a much hardier plant than the subject of the present illustration (fig. 73), which was prepared from material supplied by Messrs. Veitch from their Coombe Wood Nursery. *E. cordifolia*, however, would be likely to thrive in the southern and western counties of Britain, &c., and is a valuable addition to the list of ornamental outdoor trees for such localities. In its native habitat it attains a height of from 30 to 50 feet, and its handsome, dark green, persistent foliage sets off to the best advantage its showy white flowers. Another species, *E. Billardieri*, from Tasmania, flowered in Kew some years ago, and was figured in the *Botanical Magazine*, t. 7200. This is by no means hardy in the neighbourhood of London, but would probably succeed wherever *Eucalyptus globulus* thrives. Like *E. cordifolia*, this has simple leaves. The fourth species, like *E. pinnatifolia*, has pinnate leaves; it was discovered on the Clyde River in New South Wales several years ago, but has not yet been introduced to cultivation. *G. N.*

ORCHID NOTES AND GLEANINGS.

YOKOHAMA.

THIS climate is so favourable for the cultivation of some things, particularly Orchids, that it is proposed to increase the collection, with the view of raising seed and seedlings in quantity of the latter. We can ripen seed in about half the time it takes in England, and in our Orchid-houses it is no uncommon thing to see Orchid seedlings springing up of their own accord, and without any attention whatever. We shall be able, therefore, in course of time, to introduce Orchid seed as an article of commerce—anyhow, we intend to try. *Miyata Shoten*.

ORCHIDS AT L'HORTICULTURE INTERNATIONALE E, BRUSSEL.

The blooming of the *Catacetrums* has commenced brilliantly; already, at the end of September, I noticed many fine flowers of *C. splendens* and *C. Bungeoethi*, all the specimens of this beautiful genus growing with surprising vigour. A variety of *Cypripedium Spicerianum*, found among an importation, is remarkable for its purplish-red standard and yellowish-green sepals. The very rare *Odontoglossum Kramerianum* is also in flower, and so are many plants of *Miltonia Moreliana*, remarkable for the extra dark colouring of all the divisions of the flower; a wonderful collection. *Cattleya Varjenskyana* is certainly very fine; *Lælia præstans* has twenty blooms, making it a very conspicuous species; the size and form of the flowers, the colouring of the lip, and of the divisions in general, should cause it to be widely sought after.

Vanda amœna has a blue lip, and brownish-grey divisions; it is a hybrid from *V. cœrulea* and *V. Roxburghii*—it will be figured in *Lindénia*. *Vandas* are now beautifully in flower. I would also mention *Dendrobium devonianum* very finely in bloom.

I would add, while on this subject, that the Exposition Internationale d'Orchidées, to be arranged on the first and last Sundays in November, will certainly be a complete success. *Ch. de B.*

THE SEED TRADE.

THE FOREIGN GRASS AND CLOVER CROPS.—Reports from the great seed-growing districts of Darmstadt and elsewhere do not appear to point to a general abundance, though of some leading articles there have been good crops; in general the expectations entertained in the early part of the summer have not been realised, although the yield is almost an average one. The spring weather was most favourable generally to the development of the plants; the produce of green fodder and hay was great, but the

production of seeds has not quite fulfilled the promise of the earlier part of the season. The two principal Bent Grasses (*Agrostis*) are a very mediocre crop, both in southern Germany and the United States, and as little if any was left over from last year, prices will rule high as they did then. The quality is better than that harvested a year ago. The turfy and waved Hair Grasses (*Aira cæspitosa* and *A. flexuosa*) have been harvested in satisfactory and good quality. Of Meadow Foxtail Grass (*Alopecurus pratensis*) there is a good crop, and the germinating power is excellent, but the seeds are found to contain what is known as the "red larvae;" and the presence of other impurities necessitates severe cleaning to secure high class samples—hence prices for these must rule high. Sweet Vernal Grass (*Anthoxanthum odoratum*) has yielded a fine crop of heavy well-matured seed, and the same can be said of its variety *Puellii*.

The Tall Oat-grass (*Avena elatior*) also shows a heavy yield. Its herbage is very productive, and it is said, that when growing with other grasses cattle and sheep eat it, but decline it alone, and appear to dislike hay in which it appears in any large proportion. *A. flavescens*, the yellow Oat-grass, has been harvested in extremely small quantities, and prices must be high. Cockfoot Grass (*Dactylis glomerata*) is largely grown for seed both in New Zealand and the United States; the former reports a medium crop, and fine bright samples are rare, half the crop, at least, being discoloured by rain. The crop in the United States is better both in quantity and quality. Crested Dogtail Grass (*Cynosurus*) is an average crop, the colour not so bright as could be desired, but the germination is good.

The Fescue Grasses, and especially the Hard and Sheep Fescues, have yielded abundant crops, though the quality of some is not satisfactory. Seeds, light in weight, and often greenish in colour, in consequence of the great heat which prevailed during the time the seeds were maturing. Severe cleaning is necessary, and as this means a considerable loss in bulk, superfine samples will be high in price. The Narrow-leaved Fescue has been produced in sufficient quantity, and of fine quality. Owing to over production during the last few years, the acreage of this grass in the United States was materially reduced this season; in consequence, prices are firmer, and a return to normal conditions is probable. A variety of Tall Fescue, known as *arundinacea*, though regarded by growers as distinct from the type, is not so accepted by authorities. The true form of this is said to be grown in southern Germany, and it has been produced in good quantity, though the seed is not, perhaps, so heavy as last season, and to obtain high-class samples a good deal of cleaning is required.

Lolium perenne, the British perennial Darnel or Ray Grass, is a good crop; and so is the Italian Ray Grass, *L. italicum*; the latter is of excellent quality. The United States report an excellent crop of Timothy Grass (*Phleum pratense*), and prices which were low are rising; it is a little too early to judge of the nature of home crops. The Meadow Grasses (*Poa*), are all showing good yields, the Rough-Stalked in particular is of excellent quality, and in the case of this grass there was this season a reduction of acreage, owing to low prices ruling; the consequence is, smaller bulks and increased prices.

Clovers show varying results—some plentiful, some less so. Sainfoin rules high in price, and it is expected will advance still farther. Two-cut Sainfoin has given a fair crop this year, and prices will rule high. Trefoil shows a heavy crop, and fine samples. White Clover is plentiful, but fine samples are scarce, only medium ones having so far appeared. Reports as to the crops of Alsike Clover, both from the United States and Canada, are not favourable, and the samples received are uneven. The crop in the Rhine country is being harvested; the crops are not large, but the samples are good. *Trifolium incarnatum* has been harvested in large quantities, especially in France, and prices are low. The crop of Lucerne from Provence is small, but samples are fine and bold. A failure of crop is reported from Italy, and the seeds are inferior in boldness and

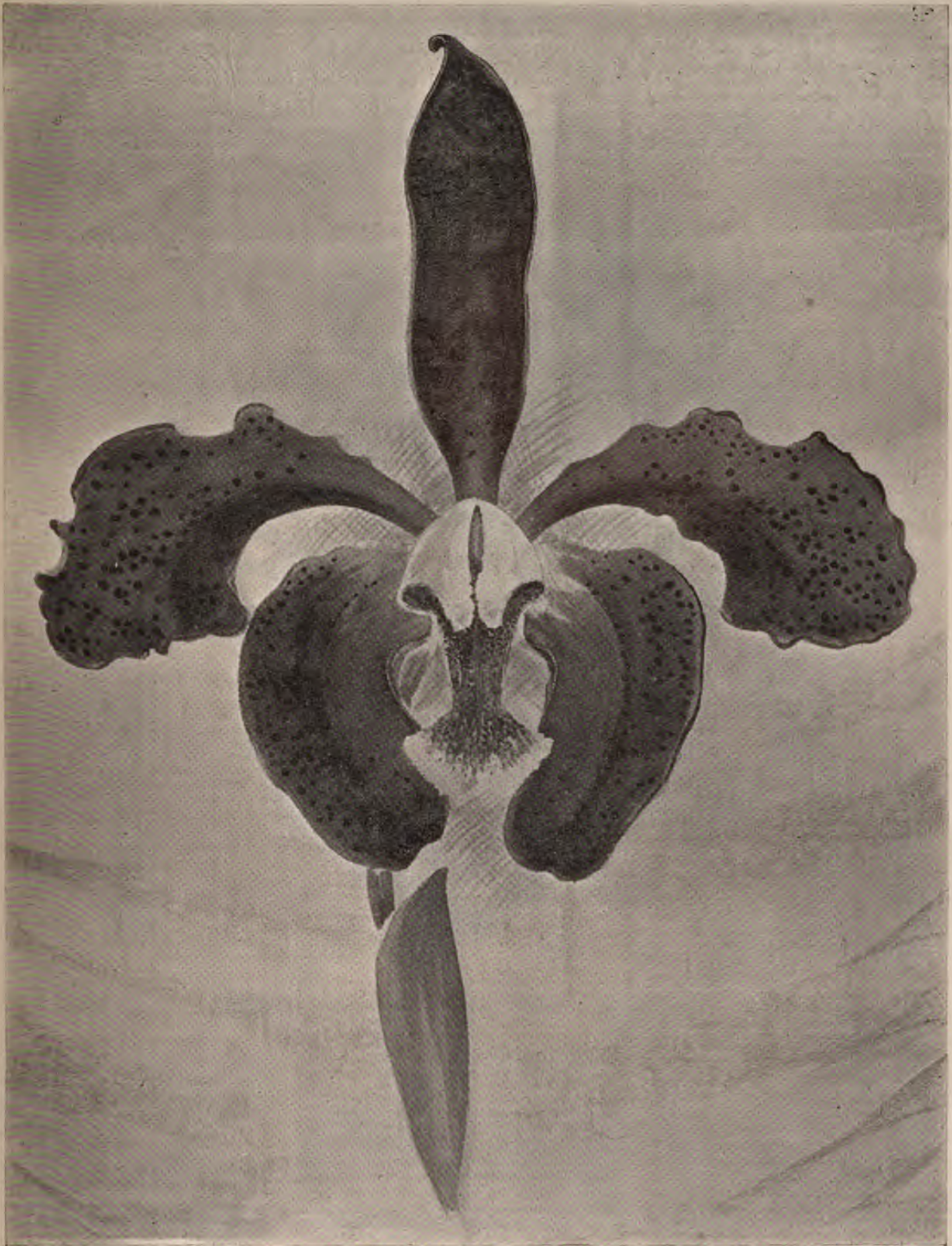


FIG. 75.—CATTLEYA SCHOMBURGKIANA, VARIETY GIGANTEA.

Petals and sepals cinnamon-brown in colour, with a yellow edge, the former having a shade of reddish-purple; lip bluish-white, shaded crimson; and extremity of lobe white; interior of convex column yellow. (See p. 246.)

colour; prices are expected to be high. As to red Clover, it is not possible, as yet, to form an opinion, as so much depends upon the character of the weather up to the middle of October. Dry weather will produce fine seed from the Rhine country, and also from the Palatinate, where a large acreage of plants has been left for the production of seeds; from a few favoured spots have already come samples of fine bold grains. Reports from France are favourable in some districts, unfavourable in others; the latter from the south, the former from the north. America reports there will be a good crop; while

artificial assistance. Whilst *Chrysanthemum* fanciers take great interest in this section, so, too, do the market-growers who furnish to the public vast quantities of cut bloom; and not one whit less interesting is it for gardeners, who have to furnish fine floral displays in the autumn outdoors, and plenty of good flowers indoors. When I saw the collection some of the earliest were rather over. I did not regret that, because I do not care for August bloomers. Those may be correctly classed as summer varieties, but few *Chrysanthemums* are needed then. At no time of the year outdoors are they of more value than just about Michaelmas;

present seen, simply because nothing was known at the time of planting as to relative heights, tall and short are intermixed. Another year, of course, that can be remedied. Amongst whites, the very best undoubtedly is the new Mychett White, 16 inches in height, flowers Japanese reflexed, broad spreading habit, distinctly beautiful. Lady Fitzwygram, 18 inches, is free and good, though the flowers have too much infusion of yellow. Of course, Madame Desgranges is there blooming freely at 2½ feet in height. Longfellow has medium-sized, flat-petalled flowers, borne in good clusters,



FIG. 73.—*EUCRYPHIA CORDIFOLIA*: FLOWERS WHITE. (SEE P. 246.)

Russia will have no seed to export this season. Reports from Hungary, Bohemia, and Galicia are as yet uncertain; but it is expected the yields will be abundant. *Pisum*.

EARLY AUTUMN CHRYSANTHEMUMS AT CHISWICK.

For everyone interested in these hardy and useful plants, the extensive collection now growing on a long broad border in the Chiswick Gardens, should have exceeding value. These autumn bloomers are less pot than outdoor plants, and it is one of the admirable features of the Chiswick collection that it is not in pots, but planted out where the conditions of culture are natural, and no variety obtains any

and it was on September 24 that I saw the plants. There were, perhaps, one-half early or September bloomers, and generally of good, useful heights; the other half showed one variety of good height and of bushy form that would not be well in bloom until the middle of October, which is rather late, and the rest were too tall, loose-growing, and late, and of whatever worth florally, quite unfitted for outdoor blooming. None the less, all that may show good flowers and excellent colours, would, so grown during the summer, well repay the trouble if lifted and blocked in boxes, or singly into large pots, and placed under glass. Where it is desired to make masses of these autumn varieties, either in beds or borders, the Chiswick trial is useful in enabling the exact heights of each variety to be obtained. As at

white flushed pink, 2 feet in height; this is a very nice variety. Mrs. Cullingford is an old one, 2½ feet in height, branches freely; the flowers are of the old reflexed type, open white and fades off to a soft pink. Yellows are very effective, especially Flora, old and remarkably good; the colour is a lovely soft golden hue, 20 inches in height, very branching, and a first-rate variety of the Pompon section. Golden Fleece is early, 2 feet in height, with large Pompon flowers, in some cases getting over; but with later plants, very fresh and beautiful. Mrs. Hawkins and G. Wermig, both 2½ feet, are well known, but the former is much the more effective. A charming dwarf yellow-flowered variety is Canari, having a spreading habit at 15 inches in height; the flowers are small, but borne in exceeding profusion. La Viberta also has smallish flowers

borne most freely on branching plants, but is 2½ feet in height. Ivy Stark is an odd name for a variety, 2½ feet high, with flowers of Japanese form, colour golden-buff, just opening well. Samuel Barlow, 3 feet high, has flowers of a pleasing salmon-rose, petals long and narrow; it is a charming variety. Very good too is Madame Eulalie Morel, flowers having flattish petals of a bright rosy-pink colour, height 3 feet. A great beauty is Edith Syrett, having a surprisingly free-branching habit, blooming profusely, flowers of good size, narrow and tasselled petals, colour bright rosy-red; this is one of the very best. Mrs. Selby has a broad-branching habit, and blooms profusely, flowers like those of a pink Mdle. Marthe. White Lady, 20 inches, branching, and free, is good; the flowers are smallish, white-flushed pink, of good form. Mme. M. Masse has large Japanese flowers of a bright rosy colour; Lady Selborne, 3 feet high, has flowers of good size, colour chocolate-red, but discolours with age. Madame E. Lefort, 18 inches, has good-sized Pompon flowers, with flat petals, having serrated edges, is very free, colour old gold. Strathmeath, 2 feet, has medium-sized flowers of peach colour, makes a good head of bloom. Toreador is very early, blooms profusely, flowers deep golden-chocolate, but was getting over when I saw it. A great beauty just fairly well opening is Harvest Home, much like Tokio, petals long, of a rich red chestnut, with golden reverse, 2½ feet. Another good chestnut is Fred Pélé, 20 inches, very branching and free. The selection given does not exceed two dozen, but it is of the very best. Those who cannot visit Chiswick may accept this list as presenting the pick of autumn-blooming Chrysanthemums. A. D.

THE ROSARY.

THE ROSE SEASON OF 1897.

ALTHOUGH we are within three months of the end of the year, it is still possible to find good blooms, especially among Teas and hybrids of this race of Roses. The wood passed through last winter very satisfactorily, and the early spring had a promising outlook. But we were soon visited by frosts, excessively dry and cold weather generally, and more than the average number of insect pests. Weevils were most troublesome; so, too, was the stem-boring saw-fly. Many a promising shoot was completely ruined by these, and I know of more than one instance where the first crop of bloom was a failure from their ravages. Aphids and the green caterpillar were rather numerous in this district (Sussex), but our worst enemy here was the small, dark-coloured grub. It was most unfortunate that the lateness of the bloom caused by the crippling of the early growths by frost, should find us compelled to alter the date—already a very early one—of our first National Rose Exhibition, but the national rejoicings made it necessary to fix this a week earlier still. Under these circumstances none of us expected to find a really good show at Portsmouth, but the result was a most welcome surprise, as although several of our largest growers, both amateur and professional, were not even present, and many classes could not boast of a single exhibitor, the nett result was far beyond general expectations.

Almost immediately after this date we were favoured with "Queen's weather," and Roses improved rapidly. Sutton, Croydon, Reading, Gloucester, and other Rose shows were even beyond their usual degree of excellence; while the Crystal Palace meeting contained more blooms than at any other exhibition. Nor have our Roses been a disappointment at any time after the latter end of June; and, as already remarked, they are still much in evidence in almost all classes or sections. Most insect pests disappeared about the same date; while, changeable as the season has been, mildew was by no means so prevalent as might well have been feared. Orange-rust, and the dark blood-coloured spots upon foliage that seem so intimately connected with this disease, were rather more troublesome than usual, and much of the leaf fell; but with better weather, copious showers, and a

warm soil, Roses soon replaced this, and were once more in full growth and bloom.

When making my comments upon the Rose season, I have generally alluded briefly to those individual blooms which secured the Silver Medals of the National Rose Society at that Society's exhibitions. It is interesting to note that both old and new varieties were equally represented during the past season. We have Niphetos winning at Norwich (one of the most magnificent flowers ever staged), a Rose sent out so long ago as 1844; while a Rose only sent out last year was successful twice. I allude to Muriel Grahame, one of the several good sports from another old Rose (Catherine Mermet, 1869), that frequently comes well to the fore. Mrs. John Laing, a Rose introduced in 1887, was also successful twice, the others being Lady Mary Fitzwilliam, Comtesse de Nadaillac, Madame de Watteville, Madame Cusin, Horace Vernet, Kaiserin Augusta Victoria, and Earl of Dufferin.

Among new Roses, Messrs. A. Dickson & Sons were again the successful competitors for the Gold Medal, winning it this year with H.P. Ulster, a very large and full bloom, but which has been described many times this season. The most remarkable Rose of the year is Empress Alexandra of Russia, a Tea that possesses good habit, and is free blooming. I have seen it grand from under glass, and to-day (Oct. 2) I cut three good blooms from a dwarf in the open. It was only distributed this summer, and from such a tiny specimen as the one I received, I have cut nine or ten blooms. It strikes one at once as being thoroughly new and distinct.

I did not purpose mentioning many varieties, but several of the newer Hybrid Teas have been so good and constant in blooming, that they really deserve naming. These are Antoine Rivoire, Marjorie, Mrs. W. J. Grant, Kaiserin Augusta Victoria, and Mrs. W. C. Whitney. Tom Wood and Laurence Allen have been the best H.P.'s of last season's introduction; while Mrs. Pierpoint Morgan, Sylph, and Muriel Grahame from the Teas have also been very good and consistent, especially the two last named. The rains came just in time to secure a prolonged and successful season for budding, and all classes of stocks have a very promising look. The hedge-Briar could not look better, and, generally speaking, the buds have taken well. A. P.

FRANCE.

M. LEMOINE'S NURSERY AT NANCY.

THE guide-books tell us, with more or less accuracy, this, that, and the other thing about Nancy; but not one of them, so far as we have seen, says one word respecting the circumstance which renders this town specially attractive to the horticulturist. In our turn we shall be just as eclectic. We shall pass over, without mention, all the other attractions of the Lorraine capital, and ask the reader to accompany us at once to the nursery of M. Lemoine. M. Lemoine is a Veitchian medallist, having grandly earned that distinction by the number and importance of his experiments and introductions. We shall not detain the reader very long here, but those who follow our footsteps and visit the nursery should be prepared for a long stay, as the number, variety, and interest of the plants to be seen demand a lengthened visit. Perhaps it is as well to say at once that the main interest consists in the wholesale way in which hybridisation, breeding, and selection have been carried out. Consequently, whilst the horticulturist pure and simple will be charmed with the diversity and quality of the stock, the physiologist and the evolutionist will find such a mass of detail suitable for their purpose, that should the University found a chair for the purpose of studying and diffusing information concerning variation, and the causes influencing it, here is the experimental ground ready to hand. Such is the variety of objects, and so numerous the experiments, that we know not where

to begin; whilst, as for the finish, that must be determined more by consideration for the reader's patience than by the subject itself.

Let us begin with the Begonias. Everyone knows how large a share M. Lemoine has had in the development of the tuberous Begonias. There are quantities here mostly going out of bloom at time of our visit (September 24); but our attention is drawn to a whole race of sweet-scented varieties. The delicate perfume, which is like that of *Lem*, is evanescent, but while it lasts it is unmistakable and not confined to flowers of one colour, but, as have said to numerous forms, all as we were derivations from B. Baumannii. Next them a group of crested Begonias, presenting the same growth or fringe as occurs on the plants of one variety Cyclamen. Indeed, it is hard to say what variety may not be expected from the Begonia. Nor is the mutation confined to the tuberous section, for there are very free-flowering semi-double varieties, from Begonia semperflorans, and others from B. L. tiana and its variety grandiflora.

Pelargoniums form another of M. Lemoine's specialties, and one of his objects at the present time is the production of *Picotee* varieties (*picotee* the ground colour of the petals being sprinkled with minute dots of a darker colour. Whether this is improvement or no must be left to individual taste to determine, enough for us to note that M. Lemoine having willed their production, here they are.

Heliotropes are grown as annuals, the seeds sown in May. As we saw them, the flowers were densely compact, of different colours, powerful fragrance, and diverse habit. These originated a cross between H. incanum and a form of peruvianum.

Hybrid Fuchsias abound, appealing to the taste of the specialists; time and space will only allow us to note crosses in which F. myrtifolia has taken a part, and others the result of a cross between F. phylla and F. splendens.

Another remarkable hybrid has been raised between *Russelia juncea* and *R. sarmentosa*. The plant cut back, so as to secure an abundant formation of new shoots, every one of which flowers at the tip.

Numerous forms of *Abutilon* call for notice; perhaps even more striking are the endless series of varieties of *Montbretia*. Often does it happen to be called on to name a *Montbretia* for a respondent. Books are referred to, specimens confronted, plates scrutinised, but as often as no definite answer can be given. The reason becomes apparent in this nursery. The area devoted to the culture is very considerable, and the number of forms apparently illimitable. There are double forms, single forms, spotted forms, forms without spots, forms of a pale primrose colour, others deep orange red, with every intermediate tint. Some have funnel-shaped flowers, others have flat, star-shaped blooms, and another set has the perianth-segments reflexed as in the Martagon Lily. We no longer wonder we find it difficult to name a *Montbretia*. Some of the varieties are subject to the attacks of a fungus, probably a *Peronospora*; but the dipping the blooms in the *Bouillie Bordelaise* is found sufficient to check the disease in check, whilst diseased plants are destroyed, and none allowed to leave the premises.

Scarlet *Salvias* add their share to the brilliant garden. There are many varieties, but called *Précoce de Chrétien* is found to be the best for bedding purposes, being fifteen days earlier than other varieties.

Of *Anemone japonica* the forms are numerous. *A. elegans* is still perhaps the best of the varieties, though one called *rosea superba* has large flowers. Of white varieties, Lord Ardilaun is the best. Coupe d'Argent and Couronne virginie dwarf forms, with double flowers. Whilst with usually more or less deformed flowers, it is attractive than some others. To see these plants at advantage they require space, and to be placed here, side by side, when their comparative merits may be adjudged. It is a curious thing that, of some of the older varieties do not mature their

the newer ones do so freely. This is a fact of which the student of evolution will do well to take note.

Of *Gladiolus* we are almost afraid to speak, so great is their number, so truly superb their appearance, even towards the end of September, when most of them have passed their best. If we were to say what we thought, or even transcribe what was hurriedly jotted in our note-book, we should lay ourselves open

sort is, however, dispelled here. The two have been crossed and re-crossed till the distinctions are extinguished. M. Lemoine himself told us so, but he gave us a hint which may be useful to others—the tendency in the flowers of *G. Lemoineanus* is to have the lower perianth segments blotched, whilst the corresponding parts in the *Nanceianus* breeds are sprinkled with small dots of colour. The hardihood

plants and hardy trees and shrubs absorb at least as much of his attention. The best and most curious are selected, and wherever possible they are crossed and hybridised. A flowering-plant is not long in M. Lemoine's possession before its capabilities in this way are put to the test. Of some of these trees and flowering-shrubs we must speak on another occasion.

(To be continued.)



FIG. 74.—HIBISCUS MANIHOT; FLOWERS SULPHUR-YELLOW, DEEP PURPLE EYE.

to the imputation of exaggeration. Moreover, to do justice to these superb plants, the writer should be a specialist. Let us simply say, the appearance of the quarters, even at the end of September, was one of indescribable magnificence. But oh! these raisers; how they do confuse us! Once we thought we knew the difference between the races known as *Nanceianus* and *Lemoineanus*. Any complacent feeling of that

is not impaired with all the change that has occurred. Other hybrids from *G. papilio* and *G. dracocephalus* were shown us, but to specify is impossible. For the same reason we must pass with the mere mention the brilliant *Phloxes* and the extraordinary *Pentstemons*, the biggest and finest we have seen.

It must not be supposed that florists' flowers form the only objects of M. Lemoine's care, greenhouse

HIBISCUS MANIHOT.

EITHER this is a very variable plant, or several species are confused with it. The plant shown by Mr. Fulford, gardener, Moor Hall, Cookham, at the Drill Hall (see fig. 74) on September 7, 1897, and Certificated by the Royal Horticultural Society, differed widely from the plant grown in the Tem

perate-house at Kew under this name. Nor is the Kew plant annual, the example under notice being about ten years old. It is cut down early in spring, and by the autumn it makes shoots 6 feet or so high, as thick as a man's finger, and it develops terminal and axillary racemes of flowers in September, being finely in flower now. The largest leaves have petioles 18 inches long, a pedately lobed blade 18 inches across, the lobes irregularly notched or toothed. Both petiole and blade are [thinly] clothed with soft, very fine hairs. In habit and leaves the plant resembles a vigorous Castor-oil plant, save that it is of a uniformly dark green colour. The flowers are fully 6 inches across, their colour being clear sulphur-yellow, with a maroon eye-like blotch at the base. The peduncle is 2½ inches long; the calyx-lobes, of which there are four, are over an inch long, by three-quarters of an inch broad at the base. The flowers last only a day or so, but they are borne in large numbers and in quick succession. For a large greenhouse this plant is worth attention. It is ornamental even when not in flower. It thrives better when planted in a border than when grown in a pot. W. W.

[We believe that this is a very variable plant, and it is possible that some might consider more than one species included under the same name. That is not our view, nor has the inspection of the plant growing in the temperate-house shaken our conclusion. The species seems distributed throughout the tropics of the Old World, but whence it originated is not clear. It is said to have been introduced from China, but the species is not enumerated in Forbes' and Hemslay's *Enumeration of Chinese Plants*. In the monograph of *Malvaceae*, contributed to the *Flora of British India* by the present writer, it is not recognised as a wild Indian plant (see vol. i. 1875, p. 341). It is not mentioned in Roxburgh's *Flora Indica*, nor in the *Flora of Tropical Africa*, nor in Mr. Baker's *Flora of Mauritius*, nor in Grisebach's *Flora of the West Indies*. On the contrary, it is included as a native plant in Franchet and Savatier's *Enum. Plant. Japon.* (1875), i., p. 64, and in the flora of Queensland (*Bentham Flora Aust.*, i., 209). Linnaeus, of course, could not have known of this locality. Probably a search through some of the pre-Linnaean books might afford some information, and also give the explanation of the name *Manihot*, also applied to an Euphorbiaceous genus. Evidently there are some interesting historical details to be unearthed when time and opportunity permit. In the meantime, we can admire the loveliness of the flower, and, although it is of no use for cutting, few things confer greater beauty on the warm greenhouse. We hope Mr. Watson will contrive to fertilise the flower, and secure perfect seed for botanical, as well as for cultural, purposes. It has been cultivated in this country, according to the *Botanical Magazine*, since 1712, at which period it was sent to the Royal Society as one of the fifty specimens then required to be delivered annually to that Society by the Society of Apothecaries. Ed.]

FRUIT CROPS OF GREECE.

It is needless to say that all our readers are in one way or another interested in the commercial success of the Hellenes, and as fruit forms a large item in products and exports, some facts in relation to this subject must prove interesting, especially when we state that the accompanying information may be considered to be official.

The fruit crop of 1897 has just been successfully gathered and stored. The principal fruit, as is well known, is Currants, and a small quantity of Sultanias and Figs is also procured; but referring to Currants, the crop of this season is estimated at 130,000 tons, against 145,000 last year, and 170,000 tons in 1895; the crop of 1894 being about the same in weight. Between the two latter amounts and the previous two, and principally to the first, there is a great difference, and this is due to a variety of reasons; firstly, to adverse weather during the maturing seasons; secondly, to inferior cultivation, which the growers were obliged to give since 1893, when, owing to large crops, the prices fell to starvation point. The Vines,

weakened by over-cropping, soon felt the effects of bad weather, which brought on the disease caused by *Peronospora*. The third cause, was that, owing to the non-remunerative prices, new plantations have been stopped, and the ruined trees have not been renewed.

The Currant crop previous to 1890 did not exceed 120,000 tons, but the unexpected and continually increasing demand, which had begun a few years previously in the French market, induced the owners of land to plant Currants as fast as they could. This appears to have been a great misfortune for Greece, for since 1890 the commercial community had to deal with crops varying from 155,000 to 175,000 tons; meanwhile the French market, which took 80,000 tons, for several reasons rapidly reduced their demands, and nowadays it seldom requires more than 5,000 to 10,000 tons. It was indeed a troublesome time for Greece, and one of the principal causes of her financial failure. Previous to 1891, the income of the country for crops of 120,000 tons was worth about £2,500,000, and, in an indirect way, perhaps another £500,000 from the lands which were afterwards used, to bring the crops to 170,000 tons the price of which fell so low that the value reached only £1,000,000 during the years 1892 to 1896.

Since the last-named year, the position has commenced to improve; the crops are becoming smaller; and further, the Government, yielding to the wishes of the growers, has passed a law by which 15 per cent. from the quantities intended for export is retained in the country and stored in Government warehouses—being gradually sold to distillers in the country at prices so low as to cover only expenses.

How the Vine disease was coped with need not here be referred to, and we can only add the hope that soon the revenue may be notably increased—it will be needed. E. C.

THE WEEK'S WORK.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorset.

Cypripediums.—The earlier-flowering varieties of the warm-growing *Cypripediums* have made considerable growths, and such plants as *C. Lawrenceanum*, *C. Stonei*, *C. Lowii*, *C. Curtisii*, *C. Swainianum* ×, *C. barbatum*, *C. callosum*, *C. ciliolare*, *C. Druryi*, *C. Masterianum*, *C. Rothschildianum*, *C. superciliare* ×, *C. Dominianum*, &c., that are in a pot-bound condition, should be repotted. When cultivated in a suitable temperature, these *Cypripediums* thrive luxuriantly, but many of the strong-growing varieties are greatly injured if kept in the same pots too long. Owing to the large quantity of water they require, the compost quickly becomes sour. When repotting well-rooted plants, put them in pots at least two sizes larger than those they now occupy. The pots must be well drained, and the compost may consist of rough fibrous peat and clean picked sphagnum in equal parts, adding some broken pieces of brick or tufa rock. There is no need to elevate the plants above the rim of the pots. The best position for the plants is one on the shady side of the East Indian-house, where plenty of light but no direct sunshine may reach them. Give them abundance of water at the root throughout the year. Such varieties as *C. "T. B. Haywood"* ×, *C. euryale* ×, *C. radiosum* ×, *C. orphanum* ×, *C. Pollettianum* ×, *C. ceno-superbiens* ×, *C. cenanthum* ×, and its variety *superbiens* ×, *C. Maynardi* ×, *C. picturatum* ×, *C. Harrisianum* superbum ×, *C. Ashburtoniae* expansum ×, *C. Io grande* ×, *C. purpuratum*, and others that are now in bloom should be repotted, or re-surfaced, with fresh material soon after the flowers fade. The dwarf-growing *Cypripediums*, as *C. niveum*, *C. concolor*, *C. bellatulum*, *C. Godefroyae*, and its distinct variety *leucoclitum*, cause many growers much trouble. Newly-imported plants will thrive well for a time, but afterwards they gradually deteriorate. The cause of failure is frequently that of growing them in too high a temperature, at the same time giving them too much water at the root. At this season, if the plants be kept in the East Indian-house, the growths frequently turn black and decay; and I find it better to remove them to the Cattleya-house, to a position where the foliage is within a foot or so of the roof, and where they will be but thinly shaded. During autumn and winter do not water the plants immediately the compost becomes dry, but allow them to remain dry at the

root for several days, even if the atmosphere surrounding them be arid; and if the house is naturally moist, a week or more without water will do no harm. Always avoid water lodging in the centre of the growths, or in the axils of the leaves. All hybrids from the above species are also liable to injury if watered indiscriminately during the same period.

The Cool-house.—*Odontoglossums* *Rossii*, *O. asperum*, *O. Humeanum*, *O. Galleotianum*, and *O. Cervantesii*, are now growing freely, and must be supplied with abundant water at the root until growth is completed. The same remarks apply to the *Sophronites grandiflora*, but this species should be placed at the warmest part of the house, and instead of suspending it from the roof as is usually done, let the plants be put upon a side stage where air is freely admitted, but where there is no draught. Arrange the plants upon inverted pots to bring them a trifle above the foliage of the *Odontoglossums*. Give them plenty of root-moisture, but do not keep them in a saturated condition. Repot *Sophronites grandiflora* and the above-mentioned *Odontoglossums* immediately after the flowers fade.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Coe's Golden Drop Plum.—Fruits of this excellent late dessert Plum still hanging upon wall-trees will ripen better if they be picked and spread out on a fruit deep in a shallow tray, and then placed on a shelf near the glass in a late Melon-house or vinery, putting a sheet of white tissue-paper over the fruits to prevent them being disfigured by the action of the sun. The fruits when thus covered assume a richer golden colour, and the flavour is improved by the warmer temperature of the house. Fruits of the variety *Reine Claude de Bay* taken from trees on north-west walls should be treated similarly.

Artificial Ripening of Pears.—It is many years since I pointed out in the *Gardeners' Chronicle* the advantage of artificially ripening some varieties of Pears, in order to maintain a good succession of dessert fruits. The method of procedure which I practised, and recommended, is as follows: gather the Pears when dry, place a little fine wood-wool or cotton-wool in the bottom of a Peach-box, covering this with a sheet of tissue-paper, and on this place the Pears closely together, one deep, covering with another sheet of tissue, and a coating of wool sufficiently thick to exclude light and air from the fruit when the lid of the box is tied down. Afterwards, place the box or boxes on the hot-water pipes in a forcing-house, in a melon-house, or a vinery, in which the fruit is approaching maturity, according to the stage of growth at which the Pears have arrived and the urgency of the demand. In this way I have had good supplies of *Marie Louise* Pear, fine in quality and colour, ripe for weeks before the fruits of the same variety from the fruit-room shelves were fit for use, thereby extending the supply of this delicious Pear for several weeks. Knowing by a sorry experience how difficult it is sometimes to maintain a good and regular supply of dessert Pears, I consider the present an opportune time to call attention to the matter, in the hope that the hints thus given may prove useful. Two or three days will sometimes be long enough to ripen Pears treated as recommended above.

PLANTS UNDER GLASS.

By G. H. MARROCK, Gardener, Luton Hoe Park, Luton.

Freessias.—The earliest growth of these bulbs will require supporting by thin sticks and neat ties of bast or raffia, losing no time in getting the work done before they get prostrate. Those plants which are to flower at the end of December should now be afforded a warmth of 65° by day, and 60° by night, placing them in the sunniest position possible, and plying the syringe freely amongst them twice daily.

Clerodendron Balfourianum.—Any potted specimens of this handsome species of *Clerodendron* may be placed in a part of the intermediate-house exposed fully to the sun, in order that the wood may be thoroughly matured, turning the plants round once a week.

Palms.—The Palm-house or other structure should now be set in order for the winter, washing the roof and side-glass, and the stages, if any. Afterwards, let the plants be re-arranged, after cleaning each with a sponge and some kind of insecticide. When every plant is cleaned and put into its place, apply the XL All Vapour twice a week, in order to kill the stray thrips which may have escaped the cleaning; the advantage to be gained by freeing Palms from insects at this season is that the latter are more readily kept

from increasing in dangerous numbers during the winter when fire heat certainly tends to further their propagation. Palms should not be often disturbed at the root, but if any should require new drainage, or new pots or tubs, there is no harm in attending to their requirements at this season, provided no more disturbance of the roots takes place than can be avoided. After such operations as re-tubbing, &c., apply the syringe twice a day, and do not be very lavish in admitting outside air. Soot and sheep's manure form a good kind of manure for such of them as have not been disturbed, or which have only received a top-dressing, and may be applied as a clear liquid if mixed with water and decanted after a few hours. Small plants of *Cocos Weddelliana* and *Geonoma gracilis* should be grown in some quantity, these being very useful subjects for standing in small vases on the dinner-table. They may be placed at the warmer end of the house, and in order to keep the leaves fresh-looking, the pots may be plunged in cocoanut fibre refuse.

Selaginellas.—Pieces of *S. denticulata* and *S. densa* may be dibbled sparingly over the surface of the Palm-tubs and pots, and given encouragement to form a carpeting which is not accompanied, so far as I have noticed, by any evil results. Some growers use *Ficus muscosa* for the same purpose; it is, however, rather coarse-looking, and robs the soil too much.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maldenhead.

Evergreen Trees and Shrubs.—The planting and transplanting of a variety of trees and shrubs may now be taken in hand, and where planting on an extensive scale is being carried out, it should be commenced at the earliest possible moment. After the rains of the past month, this kind of work may be carried out with the certainty that with ordinary care the plants will succeed, and make a certain amount of growth next season. The success that has attended the planting of Conifers at Dropmore, is due largely to the early planting which has been practised here for many years. Some of the finest trees now standing were planted in the month of September. In transplanting Conifers and other trees larger than the usual size sent out by the trade, a good ball of earth, undisturbed if possible, should be taken with the roots; and any roots extending farther than the sides of which should be kept intact, and wrapped in wet straw till planted. The mass of soil should be kept together by means of small tub-staves roped round; or in the case of balls of only 2 to 3 feet diameter, wrapped tightly round with mats or sacking. The actual transference from one spot to another may take place on a strong hand-barrow, a mason's truck, or a 3-foot square sheet of iron, fitted with rings, to which men or a horse can be attached. This last is a very handy method, the sheet being readily slipped under a ball after it is bound up. These answers for ordinary planting; and for the transplantation of large specimens, specially-constructed machines have to be used.

Pinks.—Pipings struck in frames will be ready for planting out, and the earlier that this is done the better established will the plants become before the winter. If planted in beds, the ground should be dressed with rotten manure and a sprinkling of soot, and then deeply dug. Having chosen a time when the surface is dry, level the ground and make it firm in readiness for the plants. Pinks look nice in the herbaceous borders, and the positions for them should be similarly prepared. Where the edging to such bed is of stone or other hard materials, they may be planted a few inches from it, and be allowed to grow over, and partially cover it. Mrs. Sinkins and the old white Pink are useful varieties for this purpose. In beds or groups of half-a-dozen plants, 9 inches apart is far enough for planting Pinks.

Physalis Alkekengi (Winter Cherry) and the newer and stronger-growing *P. Francheti*, are effective subjects in the borders at the present time. If the growths are cut whilst in good condition and dried, similar to *Helichrysums*, they form useful decorative material.

Marguerite Carnations which were raised from seeds sown in the spring and grown in the open during the interval, should now be full of expanded flowers and flower-buds, which, if it be thought desirable, may be lifted with good balls, and after careful potting, stood in a cold frame and kept rather close for a week or two, shading them from bright sunshine till partially re-established. Before the winter let them be placed in an intermediate-house.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Figs.—Indoor-Figs will mostly be over for the season, and that being so, the Fig-houses may be thrown wide open whenever the weather is not frosty. The foliage is very susceptible to frost, and falls off prematurely if exposed to it in October, which is not good for next year's crop of fruit. Weak shoots may be cut out, and the points of the shoots that do not touch the roof-glass may be left alone, it being a good practice to let the points turn up to the light. The Fig requires water at the root at this season, but not to have the soil saturated, as the Peach does. If a Fig-tree be growing strongly in the early-house, if the leaves are falling, it may be root-pruned, and even lifted, and have all the soil shaken from the roots; and after removing the badly-broken ones, and the toes of all the others, plant forthwith in mellow loam broken moderately fine, lime-rubble and sandstone. Manure is scarcely needed if the loam be of good quality, and contains plenty of fibre, excepting in the form of liquid or top-dressings when a tree is carrying a heavy crop of fruit. After re-planting, afford the soil a moderate application of water, and sprinkle the tree overhead for a few days, that is, till the roots enter the fresh soil. The plants in the late Fig-houses should now be denuded of all visible fruits, excepting those that are ripening. At Eastnor, small Figs of good flavour are being gathered from trees in the second or intermediate Fig-house; but gatherings must soon cease, or the trees will be unduly exhausted.

Strawberries.—The potted plants should have all runners pinched off, and the crowns reduced to one or two. Arrangements must now be made for putting the plants in frames and pits, where they may be protected from rain and frost. Failing frames and pits, shutters formed of tarred roofing-felt is a cheap and handy substitute, and if given a coating of gas-tar they will last for several years. Before putting the plants into winter quarters, afford them a thorough application of soot and lime-water which has been allowed to get clear, which will have the effect of driving the earth-worms present in the soil to the surface. Strawberry plants should be fully exposed when there is no hard frost, snow, or heavy rainfall, and the pots plunged to the rims in a bed of coal-ashes or leaves, so as to prevent loss of pots by frost.

Tomatoes.—Remove the leaves from all plants that will soon be rooted up, in order to allow the sun to reach the fruits, likewise removing all side shoots from plants that are to fruit in the winter.

THE KITCHEN GARDEN.

By W. FORK, Gardener, Highclere Castle, Newbury.

Asparagus, Seakale, &c.—If Asparagus, Seakale, Rhubarb, &c., have to be furnished at an early date, special preparations should be made whilst there is time, so as to render the plants more eligible for being forced, when in the ordinary course of things they should be quiescent. As regards Asparagus, which will have to be forced in pits and dung bed frames, it is of importance to apply special treatment to the earliest batches. For example, the plants should not have been robbed of any of their shoots during the current year, which will have had the effect of bringing on early maturity, and making a difference of several weeks as compared with plants which have been furnishing heads for the kitchen. Given strong clumps thus prepared, a failure is well nigh impossible. To force Asparagus, a half-spent Melon or Cucumber-bed fulfils all requirements, if a small quantity of fresh tree-leaves be added to stimulate the warmth still remaining in the old materials of the hotbed, care being taken not to add so much fresh material as to cause very strong fermentation. As will be understood, more heat is needed before the new year than afterwards. If hot-water pipes are not available, recourse must be had to linings of tree-leaves, with some amount of stable litter, so as to ensure a steady, genial warmth for a month or six weeks. It will be scarcely necessary to give minute directions as to the placing of the roots on the bed, although it may be well to state that the roots should be placed on a layer of a light kind of soil or half-rotten leaves, so as to separate them from the hotbed, and a sprinkling of fine soil tucked in round about and over the crowns, a heavy application of tepid water being finally given to settle the whole. The bed should then be finished off with fine light mould, laid 3 inches thick over the crowns.

Seakale.—In order to obtain the earliest produce, Seakale-roots should be taken up and planted rather thickly in pots or boxes, and placed on bottom-heat

in a warm, darkened shed or Mushroom-house. The roots should be divested of the remaining leaves, and left on the ground exposed to the sun for a week or ten days before being potted and placed in heat. This sort of treatment, and especially if slight frosts intervene, ensures a better start than would have been the case if transferred direct from the ground to the forcing-house. The new variety of Seakale, *Little Wonder*, is superior to the old Purple for early forcing—at least, this is what I find it is here; it being less hardy, a slight covering of litter should be laid on the crowns as soon as sharp frosts occur.

Rhubarb.—The Apple-crop being a poor one this year, forced Rhubarb will be more than ever in demand in the kitchen, and preparations should at once be made accordingly. The leaves should be allowed to die down completely in a natural way before disturbing the roots, and the crowns should be cleared of everything that has collected about them, thus exposing them to the sun. A warmth of not less than 60° will be required to start Rhubarb-roots into growth in late autumn, but no bottom-heat is required to keep up a regular supply, and in order to meet the demand they should be dug up at intervals of two to three weeks; or, if forced in the open quarters, the forcing-pots should be put over the roots, and warm dung and leaves placed around and over the pots. If the roots have to be dug up and forced indoors, it is prudent to cover the crown and the intervening ground between the lines of plants with stable-litter or tree-leaves to a depth of 5 or 6 inches, so as to exclude frost; otherwise, in severe weather it might not be possible to lift the roots when required.

THE APIARY.

By EXPERT.

Feeding the Bees, &c.—The month of October ought to see the bees fed where requisite, and all preparations for winter attended to, such as painting hive covers, many having been made leaky by the continued dry weather. Chaff cushions need making, and old ones repaired; and when examining the hive for the queen and the brood, winter passages may be made, or an oblong hole cut in the quilt, over which the cake of candy may be placed later on without disturbing the bees. The apiary that is put in good condition this month, will probably come out best next March. I most strongly advise that all syrup given be medicated, whether foul brood is known to exist in the locality or not. Prevention is easier than cure, and the cost of medicating is merely nominal. Feeding will not be required to any great extent this year, yet many will no doubt use the "Rapid," or box-feeder; indeed, we advise all with over half-a-dozen stocks to do so in preference to pottering with small bottles; they will greatly assist in keeping down the tendency to rob, which is sure to develop when feeding is carelessly done. Besides, a good box-feeder holds about half a gallon of syrup, and requires filling once, or at the most, twice, to give all the food needed. If set on the hive in the evening while the weather is still warm, the feeder will be emptied in a few hours, and no excitement whatever caused among the bees. Our own plan is to arrange the feeder while empty, and see that there is no access to it, except for the bees of the stock which is being fed. I then pour in warm syrup, cover up, reduce the hive entrance to an inch in width, and leave it. The following morning I usually find the feeder empty, and the bees perfectly quiet.

Robbing.—The great thing to be guarded against in autumn is what Americans call the robbing "boom," and although much mischief may arise if it occurs, it is nearly always brought about by carelessness, therefore avoid everything likely to induce a beginning to rob; feed only in the evening, keep entrances reduced in width, see that no syrup is within reach of flying bees. If hives are threatened with special attack, smear carbolic acid round the entrances; do not open the hives more frequently than can be avoided, and do it in the evening if possible; pay special attention to weak stocks, and join two together before feeding up; finally feed, and feed well! It will pay to do so.

Queens.—Examine the hives to ascertain if all the young queens are right. Lose no time requeening such stock as have old and worthless ones. If done at once, a good batch of brood may be raised from the new queen during the weeks when feeding is going on. In this case, of course, a slow stimulating feeder is used instead of the "Rapid."

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	OCT. 12	Royal Horticultural Society's Committee.
		National Chrysanthemum Society's Second Show (8 days).
		Annual Dinner of the United Horticultural Provident and Benefit Institution, at the Holborn Restaurant.

SALES.

MONDAY,	OCT. 11	Bulbs, at Protheroe & Morris' Rooms.
		Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	OCT. 12	Asaleas, Palms, Roses, Greenhouses, &c., at Protheroe & Morris.
		Roses, Fruit Trees, and other Stock, at Arches Farm, Framfield, near Uckfield, by order of Messrs. W. Paul & Son, by Protheroe & Morris.
WEDNESDAY,	OCT. 13	Bulbs, at Protheroe & Morris' Rooms.
		Sale of 100,000 Fruit Trees, at Perry Hill, Cliffe, by Protheroe & Morris.
THURSDAY,	OCT. 14	Bulbs, at Protheroe & Morris' Rooms.
		Stove and Greenhouse Plants, &c., at Protheroe & Morris' Rooms.
FRIDAY,	OCT. 15	Nursery Stock at the Arboretum Nurseries, Isleworth, by order of Messrs. C. Lee & Son, by Protheroe & Morris.
		Bulbs, at Protheroe & Morris' Rooms.
		Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—51° 4'.

ACTUAL TEMPERATURES:—

LONDON.—October 6: Max., 56°; Min., 48°.

PROVINCES.—October 6 (6 P.M.): Max., 55°, at Valentia; Min., 48°, at The Skaw.

DESPITE its funereal associations, and the dark colour of its lustrous foliage, the Yew commands a very large share of popular attention. It looks as if it might be, as it really is, the descendant of a very long line of ancestry. Moreover, the individual trees inherit length of days, so much so that, setting aside the Oak, there are few trees that can claim such an antiquity as the Yew. The flowers are generally on different trees, males on one, females on another; but, as in all such cases, the general rule admits of particular exceptions, and we find sometimes flowers of both sexes on one and the same branch. The plant has also another source of interest—it is poisonous to stock; the question has been much discussed, but we think the outcome decidedly shows that, under certain circumstances, the foliage and the seed are distinctly poisonous.

The gnarled stems and twisted branches of old specimens of Yew always attract attention, there is something weird and uncanny about them; but at the same time, a fascination which causes us to look and linger.

Tree lovers and botanists have paid much attention to the measurement of old Yews, and to the investigation of the rate of growth. DE CANDOLLE *primus*, many years since, and SIR ROBERT CHRISTISON of later years, devoted much patient research to these matters, and the reader desirous of obtaining a summary of the results obtained will find it in Dr. LOWE's attractive volume before us.*

The Yew is in one or other of its forms distributed throughout the northern hemisphere, barring the extreme north and the extreme south, so that it must grow on every variety of

soil, albeit in this country we generally associate it with limestone-soil, perhaps because other trees are more particular in their tastes. With such an antiquity, and such a distribution, it is no wonder that varieties have arisen, and some of these are so marked, and so confined to certain countries, that they are considered as distinct species by some botanists, and by most gardeners. It is, indeed, very much a case of individual judgment, and of varying standpoint, whether the botanist considers there is one Yew varying very greatly in different localities, or several species, each more or less confined to one country. Generally we see the Yew in the form of isolated specimens, but here and there we come across them forming an entire wood. The most extraordinary of these Yew-woods that we know of is the property of Mr. ABRAHAM DIXON, of Cherkley Court, Leatherhead. We reproduce an illustration of the Globose-headed Yew-tree at this place (see fig. , p.). It is difficult to exaggerate the variety of forms that may be found here, and the extraordinary interest they create. All these varied forms growing together can scarcely be considered as distinct species by the veriest "splitter." At the same time, they may be the germs of new species, which may, in the course of the ages, find themselves better adapted to certain conditions than others, and be preserved accordingly. Another remarkable Yew is that in Buckland Churchyard, Dover. It was of huge proportions, reft into two, one limb erect, the other nearly prostrate. Its age who shall tell? Now it is a symmetrical, bush-like tree, and it has changed its residence, and taken up its abode 100 yards or so from its old quarters. The history of its removal, illustrated with several cuts, was given in our columns in 1880. In some sense its removal was a triumph for the late Mr. BARRON. Eminent foresters, gardeners, botanists, archaeologists were consulted on the subject, and we believe the verdict was unanimously against removal, on the ground that it would be fatal to the tree. Nevertheless, BARRON was unshaken in his opinion to the contrary, and having had greater personal experience in transplanting monsters than any of his critics, his voice was listened to, his skill and enterprise were rewarded with success, and for a monument there is the tree in flourishing condition, less picturesque than before, for the prostrate branch was raised to its former position, but still more like what a Yew tree should be in an uninjured state, and apparently likely to go on for many more years.

Dr. LOWE, desirous perhaps of not occupying too much space, has devoted comparatively little attention to the varieties which are to be found in gardens. Of these the Irish Yew is one of the most remarkable, the branches all ascend, more or less, vertically, and form a columnar head. *Cephalotaxus pedunculata*, the *Podocarpus koraiensis*, or *Taxus japonica* of some gardens, affords a similar illustration. The value of the Irish Yew for certain forms of garden decoration cannot be denied. One of the largest of which we have a record is at Seaford, co. Down, which at the time of measurement a few years ago was 33 feet high and 58 feet round at 15 feet from the ground. The yellow-berried Yew is remarkable for the colour of its fruit. We were indebted to Viscount POWERSCOURT for some notice of the trees of this variety at Powerscourt.

The Dovaston Yew is a tree of great beauty, remarkable for the ends of its branches, which

are pendulous with elongated leaves. Its history is given in LEIGHTON's *Flora of Shropshire*. The original tree bore both male and female flowers, and from its seed seedlings were produced which reproduced the habit of the parent. As a great contrast there are the varieties called Foxi, *empetriformis* and *ericoides*, dwarf varieties suitable for the rock-work, with the leaves not twisted into two ranks as they are usually, but diverging on all sides as they do also in the Irish Yew before mentioned. *T. adpressa* is remarkable for its very short knife-like leaves. It is said to have originated as a sport from the common Yew, but that, though quite possible, is perhaps open to doubt.

The silver-variegated forms are less effective than the golden-leaved Yews, some of which are very brilliant, and confer a mass of colour that lightens up the dark of a shrubbery.

Dr. LOWE, of course, alludes to the curious fancy for clipping Yews into various shapes. This fancy has one advantage—it shows how well suited the Yew is to form sheltering hedges! Whilst we are impressed with the oddity of topiary-work, and admit that, in certain situations, and under special circumstances, it has a certain congruity with architectural features, it is, on the whole, not a practice which commends itself to the tree-lover. If already in existence in any garden, as at Levens, it would be vandalism to do away with it; but to start afresh with such freaks, is more consistent with caprice than with good taste.

THE ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral Meeting of the Royal Horticultural Society will be held on Tuesday, October 12, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 5 P.M. A lecture on "Some Curiosities of Orchid Breeding" will be given by Mr. C. C. HUBB, at 3 P.M.

MR. JOHN WEATHERS.—The announcement of the resignation of Mr. WEATHERS as Assistant-Secretary of the Royal Horticultural Society will be received with general regret. During the time he has been employed by the Society, and especially during the enforced absence of the Secretary, Mr. WEATHERS rendered valuable service. We hope shortly to hear of his appointment to another post, in which the experience he has gained at the Royal Horticultural Society will be of service.

DEVON AND EXETER GARDENERS' ASSOCIATION.—The annual business meeting was held in the Guildhall, Exeter, on the 30th ult., and the chair was taken by the president of the association, Mr. E. A. SANDERS, J.P. There was a large attendance, including His Worship, the MAYOR OF EXETER. The committee's report for the past year was read by the hon. sec., Mr. ANDREW HOPE, and proved to be generally satisfactory. The committee, however, finding that the small subscriptions paid by members, and the assistance from a few honorary subscribers do not permit of the funds of the association being used to provide prizes, recommended the discontinuance of the Hyacinth show, for a season at least. The report was adopted. The treasurer's report stated that the funds had been much reduced in augmenting the prize-list of the spring show, and that the balance in favour of the society was small. The membership, however, remained about ninety to one hundred. The president, hon. sec., hon. treasurer, and committee were re-elected. The first paper of the session will be read on the 13th inst. by Mr. J. MAYNE, Bickton Gardens, on "The Qualifications and Duties of a Gardener."

GLEICHENIAS FLOURISHING.—Few gardeners succeed perfectly in the cultivation of this beautiful genus of Ferns, and the result of this is, that from

* The Yew-Trees of Great Britain and Ireland, by John Lowe M.D. (London: Macmillan & Co.).

many gardens the species are practically abolished; or, if there be any, the specimens are poor ones. This is regrettable for several reasons, but principally because the species *G. rupestris*, *circinata*, *flabellata*, and others, when growing well, produce most elegant fronds, of a character eminently suited to various types of decoration, in vases or otherwise. We have recently been favoured with specimens of several species and varieties of this Fern from Mr. T. EASTWOOD, Lane House Nursery, Luddenden, which prove beyond doubt that at Luddenden they thrive wonderfully. Their cultivation at that place is de-

and every endeavour must be made to prevent sourness in the atmosphere and soil. In potting we use only peat and plenty of rough gritty sand. The pots are filled about one-third with drainage material. In summer we shade only slightly, and in a cool house when plentifully ventilated, very little is needed." The varieties sent by our correspondent are as follows: *G. dichotoma*, *G. flabellata*, *G. rupestris* var. *gigantea* and *glaucescens*, *G. dicarpa* and its variety *longipinnata*, and *G. circinata* var. *semi-vestita*, *Mendeli*, and *speluncæ*. The nomenclature of the genus has been very unsatisfactory, many

many fruits staged for that object. Thirty new members were elected, which makes a total membership of 213. The society has sustained a serious loss in the death of the Rev. J. Spittal, late Vicar of Haven Street, who was a honorary member from its commencement, and a very prominent horticulturist in the island.

THE DUNDEE CHRYSANTHEMUM SOCIETY is just now engaged in putting forth efforts to secure a record show this season. A circular inviting exhibits has been distributed to this end, and it is hoped that

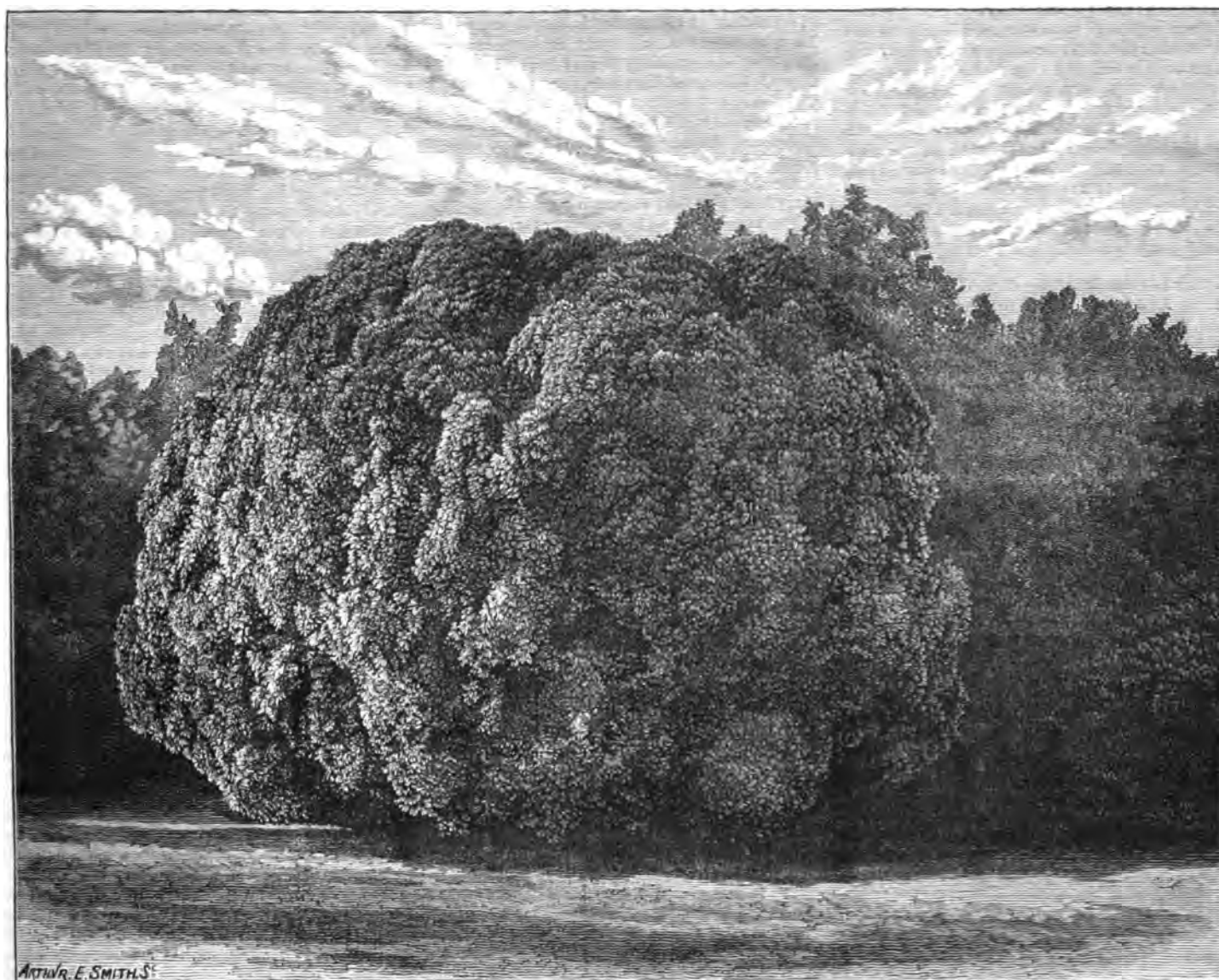


FIG. 76.—THE CAULIFLOWER HEADED YEW AT CHERKELEY COURT, LEATHERHEAD. (SEE P. 252.)

scribed as most easy, for the accompanying letter states, "I have the plants by the hundred; they grow like weeds, and have done so for years. The marked frond (*G. flabellata*) has been grown in a cool house; for weeks in severe winter weather, the temperature of the house has been as low as 27° F., the soil in the pot having been frozen. The only injury is, as you see, that the growth of the previous year is seared and scarred, but in the spring each dormant bud on every frond and rhizome, puts forth growth as strong and beautiful as ever. The best winter temperature I find to be from 40° F. to 50° F. The house should contain an extremely wet, but sweet, atmosphere, and be always kept thoroughly ventilated. Constant root watering is essential both in summer and winter,

forms that are varieties only having been first published as distinct species. The consequent revision has produced an unusually long list of synonyms in a genus that contains so few correct species.

ISLE OF WIGHT HORTICULTURAL IMPROVEMENT ASSOCIATION.—At the monthly meeting of the above association held at Newport on the 2nd inst., Mr. S. HEATON read a paper on "Fruit Culture in the Isle of Wight." The exhibits were numerous and of excellent quality. Fruit was shown by Messrs. G. Bunyard & Co., Maidstone; T. Collister, Bembridge; C. H. Snook, Shanklin; and many local growers. The adjudication committee awarded several certificates for meritorious exhibits, and named

a liberal response will be accorded it. The show will be held on November 25, 26, and 27, and in addition to a London band, other instrumental and orchestral music has been arranged for.

GRAPE-JUICE AS INK.—There is a Vine known as the "Teinturier" that used to be cultivated at Chiswick, and probably is there now. The foliage is very ornamental, being bronze-red in colour, and the berries are small and deeply coloured. In a letter before us that was written by BARIO DE SOUTELLINHO, of Oporto, to Mr. CANNELL, of Swanley, attention is drawn to the fact that the juice of the Grape may be used as writing-ink; indeed the letter itself was written by just dipping the pen into one of these

Grapes. We have received some Grapes from the same source, and from the expressed juice which we have put into a small bottle, it is possible to write well enough. The Vine is very ornamental, and we should think easily procurable. The curious may like to try this. It is said that the Grapes of this particular Vine are used to colour wine which has lost its colour, or was obtained from light coloured Grapes.

ANNUAL OUTING.—The *employés* of Mr. W. COLCHESTER, Ipswich, manufacturer of "Ichthemio Guano," made their annual pleasure excursion on the 25th ult. The place chosen was Yarmouth, and a party of about sixty persons, which included a few visitors, spent a very enjoyable day.

PRESENTATION TO MR. G. A. BISHOP.—This well-known gardener, who was until lately in the service of Alderman S. T. MANDER, was recently the recipient of a testimonial from the Wolverhampton Horticultural Club, and friends in that town and district, as marking the estimation in which he is held, and in recognition of his services in placing the Chrysanthemum Society of that town in the high position it now holds. To Mr. BISHOP's endeavours the establishment of the Wolverhampton auxiliary branch of the Gardeners' Royal Benevolent Institution is likewise due. The testimonial took the form of an address and a gold watch.

WORM-EATING SLUGS.—Mr. WILFRED MARK WEBB, the Assistant Biologist to the Essex County Council, is continuing his researches on the distribution of these slugs in the British Islands, and especially that of *Testacella haliotidea*, the slug with the shell on his back. Those who come across specimens are requested to communicate with Mr. WEBB, at Ellerie, Brentwood, Essex.

ONION SHOW AT WISBECH.—In response to the offer of special prizes made by Mr. R. W. GREEN of Cornhill, Wisbech, his customers have just recently sent in their specimens of his "Prizetaker" Onion, and the show of bulbs was held on the 23rd ult. The result was as follows: 1st, Mr. J. BOWERMAN, gr., Hackwood Park, Basingstoke, with six bulbs, weighing 12 lb. 11½ oz., the heaviest specimen being 2 lb. 4½ oz.; 2nd, Mr. E. BROCKETT, gr., Aldenham House, with six bulbs weighing 9 lb. 8½ oz. There were many other fine specimens shown. It is Mr. GREEN's intention to offer prizes for Onions in 1898.

"YEAR-BOOK OF THE UNITED STATES DEPARTMENT OF AGRICULTURE."—This publication, dealing with the year 1896, has recently been issued from Washington, and furnishes us with a good idea of the patient and successful labour accomplished during that period. In addition to the report of the Secretary of Agriculture, which occupies some fifty pages, the volume includes papers by well-known specialists dealing with various agricultural matters. One of the most important treatises is by Mr. HERBERT J. WEBBER, on the "Influence of Environment in the Origination of Plant Varieties." The author treats his subject not merely from the standpoint of a scientific observer, but notes what may be called the practical side of the question, and how variation can be made use of and encouraged artificially, so as to adapt certain species for economic purposes. His paper is illustrated, and his observations are based and founded upon those of other botanical writers. Other articles in this year-book deal with such subjects as Potash and its function in Agriculture, H. W. WILEY; Common Poisonous Plants, V. K. CHESNUT; Timothy in the Prairie Region, T. A. WILLIAMS; Seed-production and Seed-saving, A. J. PIKE; Diseases of Shade and Ornamental Trees, Migration of Weeds, Improvement of our Native Fruits, &c.

SMITHSONIAN REPORT.—The Annual Report of the Board of Regents of the Smithsonian Institution (Washington) is now published, dated July, 1895. It is, as usual, a bulky tome, dealing partly with the progress and condition of the Institution, and with an Appendix composed of contributions from various

we may mention papers on "Air and Light," by Dr. HENRY DE VARIONY; "Botanical Work of the British Association," by W. T. THISELTON DYER; "Zoology since Darwin," by Professor LUDWIG V. GRAFF; "Race and Civilisation," by Professor W. M. FLINDERS PETRIE; "Centennial of the Institute of France," by JULES SIMON; and articles on HUXLEY and his Work, PASTEUR, and HELMHOLTZ.

HAMBURG EXHIBITION.

FRUIT AT HAMBURG.—The Königliche Ungarische Gartenbau Lehranstalt in Budapest furnished at the Hamburg Exhibition, a special tent to contain a selection of the best fruits from Hungary, ripe at the time of exhibition. I visited it on August 31, and saw some fine fruit of Pears Beurré Hardy, Souvenir du Congrès, Duchesse d'Angoulême, Beurré Superfin, Dr. Jules Guyot, Fondante des Bols, and Williams' Bon Chrétien.

Among the best Grapes I would mention: Chasselas Negropont, Portugais bleu, White Muscat, Chasselas, Tokay Angevine, and Madeleine Angevine.

Among the Apples were Empereur Alexander, and many local kinds not known in England.

The growers united in exhibiting the best varieties of early Apples, Pears, Peaches, and Plums. The best kinds of Apples are, for standards, a local variety; then Cardinal flammé, Gravenstein, Reine des Reinettes, Calville Rouge d'Automne, and Bellefleur Jaune.

One exhibitor, M. Julius Váárheley, showed a seedling of Bon Chrétien under the name of Marguerite Marillat; M. Karl Vidovazky, dessert Grapes, among them a variety with very long bunches called Augustaner; M. Julius Sigmond, Turkestan Melons; M. Josef Pisa, an interesting collection of water and sweet Melons, among them Frühe Prescott Cantaloupe, which succeeded out-of-doors.

The whole collection furnished a good example of the fruit culture of Hungary. The Exhibition, I hear, had a balance of more than 300,000 francs. This sum will be equally divided between the poor of Hamburg, and the Société d'Horticulture de Hamburg-Altona, which proposes to construct some permanent premises for horticultural purposes.

THE SPECIAL FRUIT SHOW, SEPTEMBER 17—30.

This was the last of the temporary shows held during the progress of the Hamburg Horticultural Exhibition. The 12,000 square metres of glazed or roofed buildings occupied by this large and successful undertaking, as well as two large tents rendered necessary for the autumn show, were filled with fruits of all kinds. Of course, Apples and Pears were in the majority, and there were many exhibits of Grapes, but Plums, Peaches, Greengages, Tomatos, Elderberries, Strawberries, Medlars, Melons, Pineapples, Nuts of various kinds, Almonds, dried Plums, Chestnuts, and Quinces were largely represented. Open-air fruit, as well as that ripened against walls was very fine.

Every part of Germany was well represented. This may partly be explained by the fact that last year 500,000 barrels of Apples were imported to Hamburg from the United States, boding complete ruin to the German fruit-trade. The Government therefore desired all the States and Societies to take a large part in the present congress, an appeal to which all responded.

Besides Germany, the following nations were represented at Hamburg: Sweden, Norway (a fine exhibit), Switzerland, Holland, interesting contributions; Denmark, Tyrol, very fine; Spain, Hungary, very remarkable; and France, more wonderful in quality than in quantity. As these exhibits came from north, central, and southern countries of Europe, and from different quarters of these countries, the influence of soil, climate, &c., could be noted, and suggested most interested and profitable subjects for study.

The various methods of staging were also noteworthy. Most exhibitors used dishes of various kinds, supplied by the committee to the number of 50,000. Others used willow-baskets, large and small, round,

and rectangular; or wooden-cases, in which the exhibits were packed as for transit; or barrels of various sizes—all carefully arranged.

I would mention among the exhibits the Vines and Apples grown in pots.

Among the most conspicuous exhibits, judging from a hasty survey, I would include those from Holland, Schleswig-Holstein, Tyrol, Mecklenburg, and France. This latter country had an exhibit of some excellent fruit: Apples, such as Belle Dubois, Belle fleur jaune, Gros Api, Empereur Alexandre, Calville blanc; Pears Baurré d'Arenberg, Beurré Superfin, Doyenné d'Hiver, Beurré Diel and Pesse Crasane; Peaches of great beauty, coming with other fruit, from Montreuil. I would add that it was the Société régionale d'Horticulture de Montreuil sous-Bois that organised this fine exhibit.

Among Pot Vines shown by MM. Götsch and Hamkens, I would call attention to Trentham Black, Gros Colman, Rother Guteidel, Weisser Guteidel, Alnwick Seedling and Lady Downe's Seedling.

Hungary, which had, as stated at the end of August, sent a fine contingent of fruit, occupied on this occasion an entire tent with exhibits. I must also allude to M. Winter, of Bordighera, who most artistically arranged some fine fruits of Palms; and large and fine Crotons. The fruits were those of Citrus sinensis nana, Bigarade, Pomum Adami, C. decumana, C. Limonium, and Opuntia. I must not forget the fine Grapes from M. Etienne Salmon, of Thomery (France), including a hundred choice varieties. It was the unanimous opinion of the jury that the fruit show was the finest and most complete ever held.

ENGLISH GRAPES.

I observed the splendid Grapes from Mr. John R. Hamilton, Waltham Cross—surely the finest in the exhibition. I noticed Gros Colman, Cannon Hall, Alicante, Muscat of Alexandria, Black Alicante, Gros Marco, Mrs. Pines Black Muscat, and Black Hamburg; all these varieties were represented by enormous bunches of very large fruit, well coloured. Ch. De Bouschère.

BELGIUM.

ANTWERP.

In the houses of the well-known Antwerp horticulturist, M. Florent Pauwels, there were, in the middle of September, many Orchids in bloom, among them *Saccolabium retusum*, with a large and very pretty raceme; a species of *Coelia*, with rose-claret flowers, which might well be *C. macrostachya*; *Miltonia virginalis* and *M. Clowesi*; *Dendrobium formosum* giganteum of great size, with a splendid pure white lip widely striped with yellow, shading into deep orange-yellow at the base; *Zygopetalum Gautieri*, a magnificent variety; *Oncidium St. Legerianum*, flowering for the second time on the same branch; *Odontoglossum biconense* album, with a beautiful white lip; *O. polyanthum*, well marked; *Phai-nopsis E. neralda* and *coronavi*; many fine *Cattleya* *gigas*; *Oncidium Papilio*, with a large and splendid lip; *Catasetum Bungei*; *Laelia Pinelli*, very dark; *Cypripedium Morganii*, in bloom since the end of July; *C. Dominyanum*; *Pauwelsii*, which I have found in flower on each of my visits; *auricularium*, with a pretty green standard; many plants of *Charlesworthii*, and of *Odontoglossum Rozii* album.

The rosery of M. Pauwels surprised me by the vigour of the plants included in it, and by the number of these covered with bloom, for instance William Allen Richardson, Captain Christy, Gloire de Dijon, Céline Forestier, Madame Hoste, La France, Dr. Grill, Abondance, and Fürst Bismarck. Among novelties coming from the firm of Souper & Notting, of Luxembourg, I would name Madame Jean André and Antoine Rivière.

In the houses of M. GUILL. DE BOSCHERE I noted a very pretty variety of *Odontoglossum*, *album*, with the divisions of the

hue; and a very wide, milk-white lip; a variety *cidium luridum*, quite distinct from the type, the corolla a beautiful reddish-brown colour, the lip of fawn with two wine-red tubercles, the lateral lobes instead of white as with the type were yellow speckled with red, and the wings of the column rose-coloured. The petals are rosy-red marbled with white in the middle, the other half is reddish-brown bordered with white. The whole appearance of the flower is charming, and the variety is named *O. b. superbum*. *Ch. D. B.*

KEW NOTES.

ANTHORRHOEA QUADRANGULATA.—A fine example of this, the best known species of the Australian *Boys or Grass Gun Trees*, is now in flower in the Succulent-house at Kew. It has a stem 6 feet long and 9 inches in diameter, bearing a head of green rash-like leaves a yard through, and an

Governor of Fiji, in which island it is indigenous. The plant possesses the habit of *M. sapientum*, having leaves of a glaucous green colour, and an inflorescence remarkable for its large size, and the rich red-purple colour of its bracts. The same plant flowered at Kew, two years ago; but failed then to ripen seeds. The fruit is said to be six inches long, yellow when ripe, not very palatable in the raw state, but excellent when cooked. The plant is common in the forests of Tahiti, and the fruits are largely consumed by the Tahitians. In the low lands the fruits are seedless, but occasionally they are fertile at an altitude of 3,000 feet. It grows freely in a stove, and is worth including among the ornamental species of Musa.

PITCAIRNIA FERRUGINEA.

This is one of the few Bromeliads which may be grown in the temperature of an ordinary greenhouse, and it is handsome enough to merit a place in any



FIG. 77.—MASDEVALLIA PACHYURA: FLOWERS WITH BARS AND SPOTS OF RED ON A GREEN GROUND.

spike 6 feet long, which in form is similar to pike of *Typha latifolia* (Bulrush), the stalk measuring 4 feet in length, and over an inch in diameter, whilst the head is 2 feet long, and 2 inches thick, of a black-green colour, the lower portion being covered with small white star-like flowers. The same plant flowered at Kew three years ago. It is a native of South Australia, where it inhabits rocky hill ranges. Several species of *Xanthorrhoea* are cultivated at Kew, but they all thrive in a warm greenhouse if planted in sandy soil, and kept fairly moist all the year round. Anything approaching dry treatment is injurious or fatal to them.

MUSA FEH.

This interesting species is again in flower in the Succulent-house at Kew. It is supposed to be identical with *M. Seemannii*, of which a figure was published in the *Gardeners' Chronicle*, 1890 (ii), p. 182, from a photograph sent by the late Sir John Thurston,

large conservatory. In the Temperate-house is a plant of it with a dozen heads, forming a mass 8 feet high, and as much in diameter. Its leaves are more than 1 yard long, whitish, with large, marginal, brown spines, and flower-spikes 6 feet in length. The flowers are long and loose, the calyx covered with a rusty tomentum, and the petals of a yellowish-white. It is the *Puya grandiflora* of the *Botanical Magazine*, t. 5234. According to Mr. Baker, it sometimes attains a height of 12 feet.

SOLANDRA GRANDIFLORA.

The large plant of this vigorous tropical climber is again flowering freely in the Succulent-house, where the dryish atmosphere and liberal allowance of bright sunshine (the house is never shaded) are conducive to strong growth, handsome foliage, and a plentiful crop of large, trumpet-shaped, yellowish-white flowers. In the moister conditions of the Palm-house it grows freely, but does not flower. *W. W.*

MASDEVALLIA PACHYURA.

THIS rare species was first briefly noticed by the late Professor Reichenbach in the *Gardeners' Chronicle* 1874, Vol. ii., p. 322 (see also 1881, Vol. ii., p. 336). The flowers are of a green colour, horizontally barred with red. We extract the following particulars from Miss Woolward's excellent monograph of the genus:—

"*Masdevallia pachyura* was discovered by Roehl in the mountains of Ecuador, and was first described by Reichenbach in 1874 from dried specimens. The plant represented in the illustration (fig. 77) was recently imported by Consul Lehmann for Mr. James O'Brien, to whose kindness I am indebted for the opportunity of drawing the first flowers of this species ever seen in cultivation.

"Consul Lehmann sends me the following note:—'*M. pachyura* has a comparatively small distribution along the western slopes of the Western Andes of Ecuador, from the mountains of Zaruma in 3° 30' S. latitude, to the western slopes of Chimborazo in 1° S. latitude, at an elevation of 1700 to 2300 mètres (5525 to 7475 feet). It is abundant in one small district only, viz., around Cayandelet, on the road from Puente de Chimbo to Sibambe, and above Pallatanga on the road from Puente de Chimbo to Cajabamba. In all other localities it is very rare. It usually grows on trees in very damp thick woods, but occasionally I have found it growing upon walls of rock, as at Gualashay, on the road to Guaranda. It flowers in March and April, and sometimes also in November. The mean temperature of its habitat ranges from 15° to 18° Centigrade (59° to 64° Fahr.).'"

The illustration was obligingly forwarded by Miss Woolward.

HOME CORRESPONDENCE.

A TWO-FACED DAHLIA.—Calling at Dr. Patterson's, The Bridge of Allan, on Saturday, 2nd inst., I found the venerable Doctor in his study—his school, as he characteristically called it, deeply absorbed in many interesting objects, living and dead. One of those which seemed to interest him much was the most perfect two-faced Dahlia I had ever seen. The variety was much like one that I knew many years ago as Donald Beatson, and would have formed a sparkling article for the *Cottage Gardener* had the Dr. met with it, say, forty years ago. The two faces were about alike perfect. There was no back, and the stem came down the middle between the two faces. Attempts at such monstrosities are by no means unknown among Dahlias, and I have met with some attempts to look straight to all the cardinal points of the compass. But I agree with the venerable and gifted Doctor, whom it was a great pleasure to meet, that this was the most perfect two-faced Dahlia yet seen. Dr. Patterson's host of friends, North and South, will be pleased to hear that his interest in nature, art, and antiquities is as lively, absorbing, and as satisfying as ever. *D. T. F.*

THE CLIFTON ZOOLOGICAL GARDENS, BRISTOL.

—These charming grounds and gardens, which are under the management of Mr. G. Harris, well repay a visit. During September the flower-beds were very gay with tree and shrub in glorious leafage, scarcely a tint of autumn being perceptible on this elevated spot. One great object of interest to gardeners is the long border of hardy Ferns, on which can be seen many varying abnormal forms of *Scolopendrium*, with elegant and graceful, as well as robust forms of other genera. On the cool, alady border which runs for a considerable distance, these Ferns thrive considerably, being doubtless helped by a good top-dressing of leaf-soil afforded in the spring. Mr. Harris has been successful in raising seedling *Fuchsia*, and can point with pride to several new varieties of more than ordinary merit two of which have received names, viz., Dr. Shaw, a fine and striking variety, of fine form, the tube and sepals bluish, the latter with a pink reverse; the corolla pale purple, with a carmine beading on the surface; the other, which partakes a great deal of the Mrs. Russell character, has been named Thomas Hobbs; the tube and sepals are of a sort of orange-carmine, with slightly green-hued tips; the corolla is of carmine, flushed with purple, and irregular in shape. This plant is made a leading feature in these gardens. The plants are admirably kept, and the devoted florists alike can find much to inter-

FRUIT WALLS.—Much of our choicest fruit comes from wall-trees, and in numerous gardens in all parts of the country the management of the trees is well understood, and the work is well done. In others, we find only neglected trees, with the inevitable result—indifferent fruits of all kinds. I have in my mind's eye some walls in an old kitchen-garden in the "Garden of England." These walls are partially covered only with snaggy, worn-out trees that seldom bear a fruit fit to be put on the table, which have never been lifted or transplanted, nor any attempt made to put the border into a suitable condition for growing healthy trees and fine fruit. Walls we find absolutely indispensable for the perfect culture of the trees, but the border is dug every year once or twice up to the stems. It is true the building of good walls costs a large sum of money, but when built they are good for a century or two, and if they are planted with a choice assortment of fruit-trees of all kinds, they have a pleasing appearance, besides affording, with proper attention, abundant crops of fine fruits. Of course, garden-walls cannot be allowed to go for a great number of years without attention in the matter of pointing the courses, and filling up nail-holes, mending wires if they are wired, and seeing that the coping is kept in condition so that moisture cannot penetrate the masonry or brickwork. It is poor economy to build your wall and then neglect to keep it in repair. Such a neglected, ill-conditioned wall is that which was found alongside the ill-managed border and snaggy trees. And the selection of sorts and varieties matched the wall and border in regard to quality, lack of appearance, and every point that makes fruit appetising and desirable as food, or an adjunct to the table. *H. Markham, Margate.*

EARWIGS AND PEACHES.—I have been struck this season by the singular fact that while the Nectarines on a wooden fence have been severely injured by those plagues of the gardener, the earwigs, the Peaches have nearly escaped. Hundreds and thousands of these and other insect pests have immolated themselves in bottles of syrup secured to the trees, and as many have been trapped by the hollow stalks so commonly employed. I have never seen any reference to the comparative immunity from molestation that the Peach appears to enjoy, and should be glad to learn if any of your correspondents can confirm my experience. *W. T., Ipswich.*

ARAUCARIA IMBRICATA AND GOLDEN-LEAVED HOLLIES.—Probably an unique example of effective results obtained by planting two kinds of ornamental trees close together can be seen in the new cemetery at Bournemouth. The avenue which leads from the entrance-gate to the chapel is planted with alternately a pyramidal Golden Queen Holly and *Araucaria imbricata*. The contrast between the dark green of the one, and the yellow variegation of the other, is extremely effective. The trees are growing luxuriantly. There may be two opinions as to the general suitability of such an arrangement, but there cannot, I imagine, be any doubt of its suitability in the cemetery. The *Araucarias* measure 15 to 20 feet in height, and show that divergence in form so characteristic of these noble trees when raised from seed. The idea of planting *Araucarias* and golden-leaved Hollies alternately is, I believe, due to Mr. Cutler, a prominent citizen of Bournemouth. It is easy to criticise, and I would venture to make the suggestion that bushes of the golden-leaved Holly would have been more appropriate than pyramids, as being also very effective in years to come, when the branches had reached the ground all around them. Few persons are aware of the wonderful vigour of this variety in suitable soil, as is the case in this instance. It may be said by some that in the course of time the *Araucarias*, notwithstanding the delightful way they clothe the ground around in early life, may themselves become bare at the bottom and flat-headed, and thus destroy the contrast between them. *William Earley.*

LARGE PEACHES.—In your issue of the 18th ult., I read an interesting communication from J. Parkin, Blaitwaite, Carlisle, upon the subject of his production of Barrington Peaches of a large size. We also have had immense-sized Barringtons this year. The tree is several years old, and produced this year 118 fruits, the largest of which weighed 15½ oz. Six of the largest weighed 5 lb. 6 oz., an average of over 14 oz. each. The average weight of the crop was fully 10½ oz. each. The quality was also excellent in flavour. *Joseph Broome, Sunny Hill, Llandudno.*

A DWARF SWEET PEA.—I have a seedling Sweet Pea whose height, when fully grown, is about 2½ feet.

This variety was raised by fertilising some blooms of Cupid with the pollen of Emily Henderson. Its flowers, of a pure white, are produced most abundantly from the bottom to the top of the plants. The individual blooms are quite as large and the peduncles as long as in the pollen parent, so that it will be as useful for cutting as the taller-growing Sweet Peas; while its advantages in other ways over these varieties are many, inasmuch as it may be planted in flower-beds and borders where the tall ones would be unsuitable. In the present style of mixed bedding it should be useful, as white-flowering plants of this height, and suitable for bedding, are few. I have no doubt that in the course of a few years we shall have dwarf varieties of Sweet Peas in other colours. *H.*

ARAUCARIA IN NORWAY.—I send you an account of the largest *Araucaria imbricata* in Norway. The tree stands on the ground of Balestrands Parsonage, 61° 15' N. lat., in the west part of the country. It was introduced from England in 1873, and was then 0·31 metres high. On December 5, 1896, it had attained a height of 7·715 metres (about 24 feet), and the stem measured at 0·30 metres above the soil, 0·82 metres in girth. The tree has not been protected since 1876. Flowers in 1896 showed it to be a male-tree. *Peter Nøvik, Editor, Secretary of the Norwegian Horticultural Society.* [The illustration shows a well-grown tree. *Ed.*]

DO ORCHIDS DEGENERATE?—A good example in support of the argument that Orchids do not degenerate under cultivation more than other plants, is to be seen in the *Phalaenopsis*-house in Lord Rothschild's garden at Tring, where some of the species have attained to great size and vigour. Many of the largest specimens have occupied the same warm central division of a range of rather low houses, which are sunk a little below the ground-level, for upwards of twenty years. Occasionally after very long, trying winters, or after very exceptionally hot summers, Mr. E. Hill, his lordship's gardener, has observed that some of the plants lose their leaves, and are apparently not in such good condition as usual, and for a few weeks there is some anxiety felt regarding them. The plants invariably yield, however, to the influence of better weather, no attempt being made to bring about a change in the affected plants by other than the ordinary methods. Sometimes during the critical period, a plant will decline, and become a very poor specimen; but generally, the plant will take a turn for the better, and in two or three years it will regain its usual vigour and size. Many fine specimens of *Phalaenopsis*: *Aphrodite*, *P. amabilis*, and *P. Schilleriana* have been in the collection for more than twenty years; the Tring Park specimen of *P. intermedia*, which flowers so magnificently, and is noted in Veitch's *Manual of Orchidaceous Plants*, as the finest specimen in cultivation, has been in England even much longer than that; the largest *P. Stuartiana*, which has now several young plants sent forth from its roots, was one of the first plants imported in 1881; and most of the others, including species as well as hybrids, consist of the earliest which could be procured. And yet the *Phalaenopsis* are considered by many to be impossible to keep in good condition for any length of time, and some cultivators even fall altogether with them. The fact seems to be that unless a house can be found to suit them, it is useless to attempt their culture; but once such a house is found, they should on no account be shifted to another. The suitable house at Tring Park and in some other places is a comparatively small, lean-to, or three-quarter span, which can be kept at a regular temperature of 65° to 75° Fahr., and which is a middle one of a range, and consequently has not a door that opens into the outer air. *J. O.B.*

LOOK TO YOUR CHRYSANTHEMUMS!—A short time since we received some leaves of *Chrysanthemum* under cultivation, which were diseased, and threatened with destruction. These leaves were examined, and exhibited on the under-surface unmistakable proof that they were attacked by some "rust," not unlike in appearance to that which infests Thistles. Microscopical examination proved that the fungus-disease was caused by a "rust" or species of *Uredo*, probably only the *Uredospores* of some kind of *Puccinia*, in which the teleutospores, or final spores, are bicellular, and not one-celled as in the *Uredo*. This particular species appears to correspond with *Uredo Hieracii*, but this cannot be affirmed until the teleutospores are found. During the past week we have received *Chrysanthemum* leaves from two or three correspondents, affected

with the same disease in a more aggravated form; but still no teleutospores have as yet been found. The leaves are spotted on the under-surface with powdery rust-brown spots, or pustules, which break through the cuticle, and consequently are endophytic, or developed outwards from within the tissues. In some cases the pustules grow so close together that one half of the leaf seems to be covered with a bright rusty-looking powder, which is made up of myriads of elliptical spores. These, when mature, are quite powdery, and are easily dispersed in all directions. Under favourable conditions, these spores are capable of germinating, and the germ-tube then produced may enter a healthy leaf by means of the stomata, and, having established itself, spread the disease indefinitely. Thus having once become infected, there is little hope of saving the plants from destruction, unless, when it first appears, it is possible to pick off all the diseased leaves and burn them. The application of sulphur in this instance is useless, as it is inapplicable in this class of disease. The use of one of the copper solutions would probably be beneficial in preventing the spread of the pest, but it would not recover the leaves when once infected. It has been recommended in similar affections to syringe the leaves with Condy's Fluid, but in doing this the under surface of the leaves must be well sprinkled. As far as we are aware, this is the first year in which *Chrysanthemums* have been attacked by this parasite, which is, nevertheless, not uncommon on other composite plants. In all the instances which have come under our notice the infection has been most complete, and the production of spores profuse. We should recommend careful watching, and the syringing of all plants surrounding those attacked with some fungicide which would destroy the fugitive spores, or prevent their germination; but after the plants are once attacked by this kind of pest, it is almost hopeless to make any impression upon them by spraying, which will only be useful in checking the spread of the disease. *M. C. C.*

NYMPHÆAS.—I should like to say a word in favour of these beautiful and interesting plants, which deserve to be more extensively cultivated than is the case at the present time. In summers like the one we have been having, it is astonishing how very freely they flower, and how very beautiful are the flowers. My employer, having a great liking for aquatic plants, I have these last three or four years been able to grow a good many species, and should be glad to speak well of them. We have a goodsized pond with a constant spring of water rising in it, and with the over-flow from this pond I have made several others, about the size of large flower-beds, varying in depths of water from 6 inches to 2 feet. In the shallow water, which of course is round the edges, we place such plants as *Nymphaea pygmaea*, *Nymphaea pygmaea helvola*, *Nymphaea odorata minor*, *Villarsia Humboldtiana*, *V. reniformis*, *Limnorchis Humboldtiana*, *Alisma natans*, these make a very pretty edging to the large *Nymphaeas*, which are planted in the deeper water towards the centre of the ponds. I find 18 inches of water with plenty of mud suits most of the large *Nymphaeas* best. When the water is deeper than that they do not grow so well. The *Nymphaeas* are planted in water varying in depth from 1 foot to 2 feet, according to their habit of growth, the stronger-growing varieties in the deeper water. I will pass a few remarks on the ones we have grown here, and which have done well, viz.: *Nymphaea gigantea*, is a very strong grower with a large pure white flower standing well above the water, and remaining open till late in the day. [The true *gigantea* has blue flowers. *Ed.*] *N. caroliniana* is a strong grower, flower large, of a delicate rosy-pink. *N. candida* is another robust grower, flowers white, very large, free flowering, and very hardy. *N. Marliacea alba*, a very fine Water Lily that everyone should grow; flowers white, pink-tinted. *Nymphaea tuberosa* and *N. plenissima alba* are two free-flowering white varieties. *N. Marliacea carnea* is a very lovely flower, large in size, of a delicate flesh colour, wonderfully free in flowering, and of a robust habit. *N. odorata rosea* is a charming rose-coloured flower; free flowering, and of moderate growth. *N. o. exqu Coast* has rose-coloured flowers, rather darker than those of *N. o. rosea*, much the same in growth, but not quite so hardy. *N. o. sulphurea* has large flowers, which rise well above the water, the colour being sulphur-yellow; the foliage is beautifully marbled, and the plant of a robust habit—one cannot speak too highly of it. *N. o. s. grandiflora* is similar to the last named, and same in all respects, except

that the flowers are larger and a shade lighter in colour. *N. Marliacea chromatella* has a grand creamy-white flower, the foliage very robust and marbled; the plant is hardy and wonderfully free-flowering. *N. Laydeckeri rosea* has bright rose-coloured flowers that shade off into almost purple as the flower ages; the foliage is marbled, and of medium growth. *Nymphæa Laydeckeri purpurata* has deep purple-coloured flowers; and *N. L. lilacea* has, as its name implies, lilac flowers. The last three have much the same kind of habit of growth, and they are free-flowering. *N. flava* has small, prettily mottled leaves, and flowers of a canary-yellow colour, but it is not free-flowering. *N. cyanea* has done very well with us this summer, but I cannot recommend it for planting in out-door ponds; and only that we so greatly wanted a blue-flowered *Nymphæa* amongst the hardy ones, it would not have been planted. It is planted in an Orchid-pan, so that I am able to remove it to warmer quarters in the winter; it is put into the pond about the middle of June. *W. J. Townsend, Sandhurst Lodge, Wokingham.*

DO PIGEONS EAT SLUGS?—I have recently been told that pigeons feed abundantly on the small slug. I have never looked on them as brother gardeners, but if the information is true, I would gladly welcome them as such. But is it true? *H. N. Ellacombe, Bilton Vicarage, Gloucestershire.*

NEW INVENTION.

I SEND you herewith a sample of my new "Ideal" label and holder (patented). The following are the advantages I claim for it:—It is the cheapest as well as the neatest label (fig. 78) on the market; and it has this great advantage, that the label can be taken off the stem to be written upon. The stem may be used any number of times for different labels. The label can be used on both sides, thus saving 50 per cent. in labels alone. It cannot face the wrong plant, as single-stem labels are apt to do. Mr. John Pinches, of Camberwell, is manufacturing it. The cast Acme label can be made to fit the holder; and I am supplying a stouter zinc label with my name stamped in at 3s. 6d. per dozen, complete. *E. H. Harry, 36, Adelaide Road, Brockley, S.E., Sept. 29, 1897.*

NURSERY NOTES.

ANOTHER KENTISH SEED FARM.

SOME four years ago, that famous Scotch seed-firm, Messrs. Dobbie & Sons, who had previously a farm so remote as Beaulieu in the New Forest, resolved to get nearer London, and they therefore secured the lease of a fine open space of ground at Orpington in Kent, near the railway station, and right under the shelter of the lofty South Eastern railway embankment. The position is very open, and it is also on a slope or hill-side, affording a maximum of sunlight and air. The soil is of the ordinary loamy brash on chalk. On a seed-farm, the range of plants cultivated is remarkable; and few places to the flower-lover or general gardener are of more interest. There is also so much of interest in noting methods of growing for seed-production, the extreme care shown in keeping the various stocks select and true, and of not generating too luxuriant growth, lest the object in view be discounted.

Messrs. Dobbie & Sons have a high reputation for African and French striped Marigolds. The strains are, as seen growing, undoubtedly of the very finest. Of the Africans, the orange-and-lemon forms have flowers as big rounded, massive, and of their kind as perfect as the world produces. They are indeed marvellous Composites, and it is interesting to compare them to the singles growing beside them. When I was in the business and growing Marigolds, I invariably pulled out every single from the stocks, and always got plenty of good seed. Mr. Fyfe, the Orpington member of the firm, holds differently, for he regards the single flowers as indispensable to furnish pollen for the doubles. I noticed that there were no intermediate flowers anywhere, every one was either a high class double or a real single. Each colour is

separately grown. There is an immense breadth of the tall striped strain of French Marigolds; none in form of flower or of markings could be more perfect. I have never seen better striped French growing in bulk. Of the dwarf or compact section there is of self, orange, lemon, and chestnut-red, all perfect in flower and colour; there is also a dwarf striped strain, and that and the orange seem to be the most in demand. The plants are about 10 inches in height, blooming profusely, the flowers being of the finest form.

Asters are great features at Orpington. The plants were less strong than usual owing to the drought. Long beds of all conceivable colours followed one after the other, and of all the leading sections *Pæony-flowered*, *Victoria*, *Mignon*, *Comet*, *Princess* and *Quilled*. Of the latter alone there are twenty-eight diverse varieties. Nearly all the Asters grown here are of several years' home-growing, and the quality in every case remains of the highest. Inter-crossing with these flowers is rare even when grown side by side. Two new ones have come from seed, and one plant only of each. One a quilled variety of two diverse rings of blue with a white centre, and the other a flat-petalled *Victoria* of a pleasing and distinct *Heliotrope* colour.

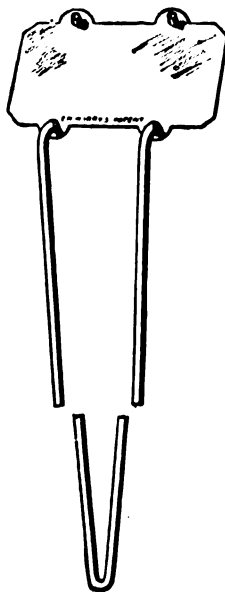


FIG. 78.—"IDEAL" LABEL AND HOLDER.

Dahlias of every description, from the finest Show to the quaint single Cactuses, are grown to produce seed and roots, which are all later sent to Rotham for propagation. In the firm's northern home, as many as 16,000 of these diverse Dahlias are grown—really a wonderful number.

Good strains of double Hollyhocks are here for seed, and big breadths of *Violas* from winter-established plants in big clumps seed profusely. All the best-known varieties of good robust habit are here. Very beautiful are the *Pentstemons*, some of the new or continental varieties grown in quantity have not only very fine flowers, of which the pencilled throats are the best, but in bulk show remarkable fitness for bedding. Such varieties as *Emilie Deschanel*, deep carmine-red; *Alphonse Daudet*, magenta; *Emilie Paladilhe*, beetroot-red; *Claude Gellée*, intense red; *Mrs. Laidlaw*, rosy-pink; and *Dietz-Monnim*, deep violet, are splendid, and these will give fine seed crops, with many others. *Antirrhinums* are very varied and fine. Special attention is devoted to securing fine selfs for bedding, yet having large flowers. A pure white, a yellow, and a rich crimson are first-rate for this purpose. The pot Marigolds *Orange King* and *Meteor*, in large breadths, make a fine show. Sweet Peas have been harvested, and the new pink-flowered dwarf variety

Cupid is found to do better than the white variety. Of great interest and beauty is *Michauxia campanuloides*, which sends up branching stems 6 feet in height from plants raised last year, and which have stood the winter outdoors. The habit resembles that of a robust *Chicory* plant; the flowers are pure white, have eight narrow petals, and bear superficial resemblance to those of *Passiflora*. The seed-pods resemble those of the *Canterbury Bell*; the foliage is elongated, and is somewhat of the *Acanthus* character. A patch of single striped Dwarf French Marigold shows this plant to be even prettier than is the popular *Legion of Honour*.

Naturally the firm grows vegetable seeds very largely also, and foremost amongst these are Onions. Large breadths of bulbs are growing to produce stock, and these will be planted next year in big breadths to produce seed. The firm are less concerned to have many diverse names for Onions, than to secure the best possible type of oval or globe, round and flat, to suit customers' special requirements. It is obvious that Onions bear to each other remarkable likeness, though shape, or colour, is the chief distinguishing feature. Large breadths of *Tomatos* in the open have done well. There is here a very beautiful—indeed, perfect—strain of decorative *Parley*; and the *Victoria Kale*, a splendid advance in all respects on the tall curled Scotch, is in its best form. The *Leek* is largely grown and plants in quantity in the seedling-stage, as also *Carrots* of all the best stocks were observed. *Paranips*, *Beets*, &c., and *Turnips*, especially *Golden Ball*, recently sown in drills, will furnish numerous bulbs for seedling next year. It is in this way so imperfectly described, that our home seed-firms labour so conscientiously to produce at home for the British public the finest of seed stocks. *A. D.*

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 20 AND OCTOBER 1, 2.—A full report of the competitive classes at the Crystal Palace Fruit Show held as we were passing through the Press, was given in our last issue. We now append a few notes upon the non-competitive collections of fruit and flowers staged on the same occasion, many of which were grand examples of nursery produce.

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, made an exhibit of some size, which included a fine lot of Apples and Pears, and in the centre were a few *Malden* Apple-trees bearing very good crops of fruit. Prominence amongst Apples in this exhibit was given to *Bismarck*, a variety that does exceedingly well in these nurseries; *Prince Albert*, *Bess Pool*, *Ribeton Pippin*, *King of the Pippins*, *Lord Derby*, a good cooker; *Cox's Orange Pippin* (very fine fruits from bushes 4 feet over); *Jubilee*, a late bloomer, and a valuable sort; *Warner's King*, and *Dumelow's Seedling*. *Cowan's Victoria* is a pretty little Apple of some merit for dessert, but it has never made its way though raised about fifteen years since. Of *Pears Duchesse d'Angoulême*, *Pitmaston Duchess*, and *General Todleben* were represented by some first-rate specimens, a fruit of the last-named weighing 2½ oz. *Burré Nigan* and *Burré Goublat* were also noticed among the others in the collection.

From the Handsworth Nurseries, Sheffield, Messrs. FISHER, SOX & SIBRAV, exhibited a collection of Apples and Pears in about eighty-five varieties, that though less good in appearance than others from the south, were capital for that district. *Tower of Glamis* and a few other good sorts for planting in the Midland and Northern Counties were shown, also a few excellently-trained trees from the open of Apples and Plums, of which the firm possess a very large stock.

The Horticultural College, Swanley, was represented by an exhibit of Apples and Pears, Nuts, Melons, and some good black *Alfonse Grapes*, as also a number of bottles of preserved fruits.

Messrs. PEED & SONS, Roupell Park Nurseries, West Norwood, made an exhibit of fruits, composed for the greater part of Apples and Pears, but inclusive also of a few choice Grapes. Many of the Apples and Pears were represented by first-class specimens, and the following were put up in baskets that held a considerable number of fruits, *Brunswick*, *Golden Pine Pippin*, *Blenheim Orange*, *Cox's Orange Pippin*, *Emperor Alexander*, &c.; and Pears, *Marie Louise*, *Burré Diel*, *Pitmaston Duchess*, *Durondeau*, &c.

One of the tables was laden with fruit from HER MAJESTY'S Gardens at Frogmore (gr., Mr. O. Thomas). It contained fine Grapes, first class heavy *Pine-apples*, a representative display of Apples and Pears of good quality, and an abundance of *Tomatos*; indeed, the most prominent feature of the exhibit, and the most attractive

of the variety Golden Jubilee, an excellent, yellow-skinned Tomato raised at Frogmore. There were Grapes of the following varieties: Muscat of Alexandria, Lady Downes Seedling, Raisin de Calabre, and Black Alicante. There were several Melons; and the Pines, of which there were upwards of a dozen, were splendid.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, London, S.W., exhibited an uncommonly representative collection of Apples and Pears—Apples, on the whole, being those best shown. Including Apples and Pears there were something like 170 dishes. The arrangement of the baskets and dishes of fruits, unrelieved in any way, was in our view hardly so pleasing as it might have been. Some of the best shown Apples were put in baskets running along the centre from end to end of the table. In these were such varieties as Gloria Mundi, Tyler's Kernel, Warner's King, Blenheim Orange, Loddington Seedling, Norfolk Beautif, Stirling Castle, Laue's Prince Albert, Cox's Pomona, Alfriston, Sandringham, Winter Hawthornden, Lady Henniker, Red Hollandbury, Lord Derby, Seaton House, Bismarck, King of the Pippins, Peasgood's Nonsuch, Ribston Pippin, and Cox's Orange Pippin, the two last-named being particularly good. The Pears of such varieties as Beurré Fonqueray, Marie Louise, Doyenné du Comice, and Pitnaston Duchesse were the best.

An exhibit from Messrs. SUTTON & SONS, Reading, consisted exclusively of Tomatoes. They had heaps of fruits, representing six or seven varieties, that constitute the specialties of the firm in regard to this fruit. Sutton's Peachblow is of the type possessing an appearance similar to that of a Peach, and is described as being better than other such varieties, which we have generally found to be rather wanting in flavour. Sutton's Al and Sutton's Perfection are both good Tomatoes, the latter being the best for most purposes. The fruits are of the true Perfection type, solid, and of grand colour. In size it may become larger than required, if the cultivation be too liberal. Sutton's Pomegranate is a pretty fruit, and admirers of yellow-skinned Tomatoes may choose between Prince of Wales, Golden Queen, and Sunbeam.

From the Royal Horticultural Society's Gardens at Chiswick was shown a collection of Pears and Grapes. Some of the bunches of Grapes, such as Gros Guillaume, from the large vine, were unusually large.

Small stands of fruit were exhibited by Mr. W. HORNE, Perryhill, Rochester; and Mr. B. WELLS, The Fruit Nurseries, Crawley; and a larger collection from Messrs. S. SPOONER & SONS, Hounslow.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, contributed a table of fruits; and in a small group upon a table some seedling Begonias from the open ground were shown. The different colours were represented in good strains. This firm also staged upon the floor near to the Orchestra an admirable group of plants, inclusive of very well-coloured Codieum, miscellaneous stove plants of a decorative nature, and a centre panel composed of double and single flowered tuberous-rooted Begonias in bloom.

Roses were shown by Messrs. PAUL & SONS, Cheshunt; and Messrs. W. PAUL & SONS, Waltham Cross, Herts. The first-named firm had a group of well-flowered Roses in pots, and supplemented these by numerous bunches of cut flowers from hardy plants. The Waltham Cross firm showed cut Roses only, and included some of the newer varieties introduced from Waltham such as Enchantress, Sylph, Queen Mab, &c. We shall probably see no other such exhibit this season.

From Messrs. HARKNESS & SONS, Bedale, Yorks, were shown a number of Gladiolus sprays, and bunches of hardy blooms.

There was a pretty group of stove and miscellaneous plants from Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, N., in which we noted some brightly-coloured Cordylines and Codieums, and a few greenhouse Rhododendrons in bloom.

Messrs. J. CHEAL & SONS, Lowfield Nursery, Crawley, had seven large boxes filled with Dahlia blooms.

Mr. T. S. WARE, Hale Farm Nurseries, Tottenham, had a fine lot of double and single Begonias, and blooms of Cactus-flowered Dahlias.

Messrs. JAS. VEITCH filled a table with plants in flower of Nerine Fothergill major over a carpet of Ferns. These plants, with strong spikes and a profusion of blooms, made a very bright picture.

THE CONFERENCE.

At the first day's Conference, held in one of the Terracottas, Sir TREVOR LAWRENCE, Bart., President of the Royal Horticultural Society, occupied the chair. Mr. GEORGE BUNYARD, of Maidstone, read a paper entitled—

Fruit Culture in Her Majesty's Reign, 1837-97.

He said it was somewhat difficult to carry one's mind back to the condition of fruit-culture that existed sixty years ago, but he asked his audience to pay a visit, in imagination, to a well-kept garden of 1837, to inspect the style of culture then in use, and to take note of the varieties of fruit which were cultivated in it. The writer then drew a picture of such a garden, and incidentally quoted the *Gardeners' Chronicle*, which was responsible for the statement that there were 150 garden Apples in 1837, of which thirty were now in general use. All the espaliers in the garden would be of great age, with perfect bundles of spurs on their old arms, carefully and closely pruned as to their branches, but with roots which had never been disturbed from the day they were planted, probably more than half a century before. In

those days Dessert Apples were smaller than they are now. As to Strawberries, in no class of fruit had greater progress been made. Previous to 1837, Black Prince, Keen's Seedling (1821), and Carolina were the only good varieties; and the gardens of the period were filled with such forgotten sorts as Carmine, Hudson's Bay, Scarlets of several varieties, Rosebery, Cones of sorts, Glazed Pine, Bostock, Chili, and a greater number of the Hautbois and Alpine varieties. British Queen was in commerce in 1840, and President about 1850. The 1842 catalogue of the Royal Horticultural Society gave a list of twenty-six useful varieties, and of about 309 others of no value or synonymous with others.

OLD METHODS OF TRAINING.

In justice to our forefathers, it should be mentioned that they took intense pains and trouble to train their trees: the Peaches, Nectarines and Apricots were taken away from the walls annually; the walls washed with a dressing of soot, lime and sulphur, and soft-soap and clay; while the gathered-up boughs, carefully secured to poles away from the wall, would be cleansed by the snows and rains of winter, and the free current of air. After Christmas, they would be carefully looked over and pruned; each bough and twig would be replaced on the wall with geometrical precision. Such care would be followed by a timely finger-and-thumb practice on the fore-right shoots in April, it being considered sacrilege to "knife" Peaches, &c., in the early summer; and a few leaves would be taken away to assist the fruits to colour. Later on, a careful thinning of the fruit, judicious laying-in of the thinner shoots, and the removal of wood that had fruited, would ensure a crop for the following season. Such care was seldom exercised on wall-fruit in these days, the gardener depending more on his crops from heated and cool houses.

INTRODUCERS OF VARIETIES OF FRUITS.

About this time Messrs. R. Thompson, at the Royal Horticultural Society's Gardens; Ronalds, of Brentford; Wilmot & Chaundy, of Lewisham; Thomas Rivers, of Sawbridge-worth; Osborn, of Fulham; Lee, of Hammersmith; Pearson, of Chilwell; and Chandler, of Vauxhall, were the giants in fruit-tree culture. Probably, also, our landed gentry had more frequent intercourse with the continent, which led to an awakened interest in fruit-growing, and any fruit with a French name was then thought to be worthy of culture, and Britain was flooded with varieties which time and experience have proved to be worthless for our climate. In fact, many were but perry and elder fruits, and probably the continental stocks, as well as most of our British ones, were far from correct to name. Still, some good continental varieties were introduced, which are retained to this day. But no doubt the national dislike to anything foreign operated in some degree against their general adoption in the provinces. Meanwhile new methods had appeared on the scene.

DWARFING STOCKS AND GLASSHOUSE CULTURE.

The introduction of glasshouses heated by hot-water, and the removal of the duty on window-glass, at once gave an impetus to fruit-culture. At first Grapes felt the benefit of the change, and later Peaches and Nectarines; but when Thomas Rivers of Sawbridge-worth adopted the Continental practice of using the Quince-stock for Pears, and the Paradise-stock for Apples, the old saying, "plant Pears for your heirs," was exploded, and the marvellous little pyramidal trees, a yard high, producing fruit in abundance, and bush-Apples with a crop that would weigh down the trees themselves, at once became the rage. These fancy trees, combined with Mr. Rivers' practical treatise on "Root-pruning, Summer-pinching," &c., laid the foundation of that marvellous culture of garden fruit which had placed our British produce in the foremost position, whether for size, beauty, flavour, or quality, and had by degrees made what were the luxuries of the few in the past, the inheritance of all classes. For example, good Grapes, once 25s. or 30s. per lb., could now be had from 1s. to 2s. 6d. The abolition of the duty on glass in 1845, the modification of the timber duties in 1830, practical application of hot water for heating purposes, dating from 1821; the introduction, by Mr. Edward Weeks, of Chelsea, of his tubular saddle boiler in 1835; the introduction, in 1839, by Mr. John Weeks, of his upright boiler; and the use of steam saws and planes for cutting out and shaping suitable timber for rafters, sashes, &c., together with the assistance of railways, steamships, and canals were all factors which had brought about the present state of perfection.

ROOT PRUNING AND FEEDING.

In our time every good gardener had added to the regular garden routine—root-pruning of all fruit trees that grew so rapidly as to become void of fruit-buds. This practice had, perhaps more than any other, helped on the culture of garden fruits, and by maintaining a proper balance between the anchor roots, which developed the woody growth, and the upper or fibrous roots which were supposed to nourish the fruit, had thereby ensured success should the English spring weather prove favourable. There was no doubt that root-pruning, combined with the summer mulching and feeding of those trees that were carrying heavy crops, embodied the most conspicuous advance in fruit culture of the Victorian period.

FRUIT SHOWS AND CONFERENCES.

The increase in the size of exhibition Apples and Pears had been wonderful, even those varieties figured so recently as 1855 in the *Herefordshire Pomona* were now exhibited of double the size. A large share of the present practical store of knowledge we possessed as to varieties, culture, and novel-

ties, must be justly said to be due to the energy and taking reports of the horticultural press of the past, not forgetting the publications of the Royal Horticultural Society and its valuable work at Chiswick, where so many fruits had been grown, tried, and reported on the most valuable of the Royal Horticultural Society's sided work was the awarding of Certificates, thus stamping them with its authority, and helping to notice many little-known and valuable varieties, alluded to the pomological literature of the period, he awarded the palm to the late Dr. Hogg, and referred to the excellent work done by writers on the subject, he went on to say he could the greatest direct benefit to fruit culture, so far as was concerned, was derived from the 1883 conference at Chiswick by the Royal Horticultural Society, conference not only brought some fine, but little varieties to the front, but what was of more importance, a list of synonymous names was a wholesale error in nomenclature corrected; and as a landmark, and a starting point for much that was done in London and the provinces; and the great Show of the Fruiterers' Company, held as it is the heart of the city, served to convince that that grand fruit could be and was grown in this. The other conferences, and the great fruit-shows at the Crystal Palace Company, accurately gauged the progress. The Royal Horticultural Society's 1894, 1896 Palace Shows had brought together such collections of autumnal fruits as had never been before seen; a satisfactory find new exhibitors coming to yearly from all parts of the kingdom. Success in fruit for market could only be secured by bringing methods to bear on farm fruit-culture. The tables of the Board of Trade showed an enormous increase in land laid down to fruit; and where this done, fruit growing became a paying industry, as the commercial activity of the fruit-tree nurserymen present time, and the desire to excel in friendly co-operation in fruit exhibitions.

THE BENEFITS DERIVED FROM THE CONSUMPTION.

The placing before the public of examples grown and care, the introduction of novelties, and the prep. red catalogues of the trade had, he believed, beneficial factors in the general advance made culture; tending to popularise the growth of whether for pleasure, profit, or as a hobby, to the advantage of the public in the matter of wealth and in fact, he would go even further, feeling convinced this particular matter, that a great measure of the health of dwellers in large towns was to be directly the cheap supplies of fruit and vegetables place their reach by the commercial energy of markets and distributors.

COUNTY COUNCIL LECTURES.

Still further, benefit was to be expected in the result of the practical lectures now given by County experts in fruit-districts among the intelligent classes. In conclusion, the writer said he felt would be agreed that the rate of progress in horticulture had been quite as rapid and far-reaching as in many of industrial arts and sciences, and he looked forward to greater progress in the future among intelligent gardeners, nurserymen, and hybridists, time, who were not slow to avail themselves of opportunities that lay around them.

FRUITS OF THE LAST SIXTY YEARS LIKELY TO BE PERMANENT ADDITIONS.

Mr. BUNYARD had some most valuable and appended to his paper. In these he gave a complete list of fruits in cultivation in 1837, of notable fruits to commerce in 1837 to 1897 with their dates; and list of the best fruits noted by the *Gardeners' Chronicle*, November, 1841. He also prepared the following fruits of the last sixty years likely to prove permanent additions:—

Apples.—Allington Pippin, Cox's Orange, Bramling, Gascoigne's Scarlet Seedling, and Grenadier.

Pears.—Beurré Hardy, Beurré Superfin, Doyenné du Comice, Emile d'Hayst, Fondante de Marguerite Marillat, Marie Benoist, Olivier des Saumons Duchesse, and Thompson's.

Plums.—Comte d'Arthem's Gage, Jefferson's (J) Pond's Seedling, Transparent Gages, Rivers' Cass Prolific, and Rivers' Monarch.

Cherries.—Early Rivers, Emperor Francis, Bigarreau, and Ludwig's Bigarreau.

Figs.—Bourjasotte Grise, Negro Largo, St. Jo Violette Sepor.

Grapes.—Muscat Hamburg, Madresfield Court, Pince.

Damsons.—Frogmore Prolific, and King of Dams. *Raspberries*.—Baumforth's Seedling, Hornet, Wonder, and Superlative.

Strawberries.—Auguste Boisselot, Countess, H. Thury, President, Royal Sovereign, Sir Joseph Pa Sir Charles Napier.

Nectarines.—Dryden, Early Rivers, Humboldt Napier, Pine-apple, and Stanwick Elrige.

Peaches.—Early Amosden, Early Alexander, H. Watson (these four are American), Alexander Dymond, Goshawk, and Glidstone.

The Discussion.

The President expressed the opinion that the meeting had taken a very interesting paper. No doubt Mr. Bunyard had taken immense trouble to prepare it, and it would have to be read and studied before they could fully appreciate its merits. He thought that person must be blind who could not see that during the Queen's reign the advance in the cultivation of fruit had been made by leaps and bounds. He had recently been staying in a remote district in South Wales nearly 300 miles from London. At Pembrokeshire, the county in question, he had been able to buy most excellent Muscat Grapes for 1s. 6d. to 2s. per lb., and he was quite certain that if he had wished to buy such Grapes in the London market twenty-five or thirty years ago he would probably have had to pay 7s. 6d., 10s. 6d. or even 15s. per lb. That state of things was, however, confined to the United Kingdom. He happened to be in Geneva during the time of last year's exhibition, and while there he was supplied by a member of the Rothschild family with some magnificent Grapes. He was certain from the expressions of surprise on the part of the attendants at his hotel, that they had never seen such fruit before. As to the size of Apples, he could not help saying that he did not attach great importance to that. If increased size meant the sacrifice of quality, he would prefer quality, as he cared no more for a 14-oz. Apple than he did for a 6 feet 4 inch man if the quality suffered. He thought it but right to mention that the gardener at Geneva, under whose care the Grapes sent to him were grown, was without doubt an Englishman, his name being John Smith.

Touching on the question of farming, he said he had recently experienced that many people who professed to understand farming, did not know how to make butter. Unfortunately, farming was not in the hands of people who could learn rapidly. He believed it was greatly owing to the exertions of the people of this country that such great advances had been made in fruit-culture, and great gratitude was due to gentlemen like Mr. Bunyard, who had devoted themselves to improving the industry, and had brought their ability and enterprise to bear in that direction.

Mr. CAMPBELL, of Glestworth Court, Ross, Hereford, considered that farmers approached their work with too much prejudice, and only a few men came prominently to the front by their energy and enterprise. He agreed with the President that much of the butter now made was quite abominable. Alluding to the subject of "packing," he said their watchword should be "honesty." The practice adopted by many growers in packing, arose from the greatest carelessness, but in some cases it was otherwise; and he would impress upon everyone that honesty in packing was not only the proper standard to adopt, but it was the best policy from a financial point of view.

Mr. E. POOLE, F.R.H.S., The Gardens, Clere Hill, Downend, near Bristol, said he made it a rule never to plant more than twenty sorts of Apples; and in packing, their maxima there was, "No tops or bottoms, but the same quality all through." He attached the greatest importance to grading through. He would impress upon everyone that it took no more and he would grow good sorts than it did bad ones. He also mentioned that in his neighbourhood there were orchards which had not been disturbed for forty years.

Mr. PEARSON, Chilwell, said although his experience did not extend over sixty years, yet it had been considerable, and he never knew Apples to grow well where Apples had grown before.

Mr. ROUPELL, London, said he was of opinion that the trained trees of fifty or sixty years ago were far superior to those of the present day. Everyone had gained enormously through the introduction of Cox's Orange Pippin, and if they had nothing else to boast of, that variety was one of which they might always be proud. As to growing for profit, he would only call their attention to what had been done with the Strawberry and the Tomato. There was practically an unlimited demand for Tomatoes, and all that was essential was that they should be sent to market in good condition. The Tomato was not now so much used as a vegetable as a fruit, and he scarcely sold a pound of Tomatoes except for dessert purposes or for salads. There was a great demand for the five-to-the-lb. smooth variety, and little for the corrugated ones. He believed money might be made by growing Tomatoes, but their culture should be carried on near London so that they should not be handicapped by heavy railway rates.

Mr. JOHN WRIGHT proposed a hearty vote of thanks to Mr. Bunyard, to whom he said they were under great obligations. He thought it only right to call to mind a fact which Mr. Bunyard's modesty had prevented his mentioning, and that was, that had it not been for Mr. Bunyard, the old hall Show of 1890 would never have been held. Much opposition and adverse criticism had to be encountered, but Mr. Bunyard's foresight and determination overcame all difficulties. That exhibition was a magnificent one, and a good game of it. Gardeners were greatly indebted to the nurserymen of this country for providing such excellent healthy trees at such reasonable prices. In old days people raised their own trees in various ways from seed, and grafting, and they filled the country with a lot of worthless stuff, which was a disgrace to the nation. All that had, however, been altered by the nurserymen of England. The new having been heartily carried.

Mr. BUNYARD, in response, assured the meeting that the nurserymen were doing their best for the industry. He agreed with much that had been said about reducing the number of varieties, but the requirements of the market had, of course, to be studied.

MARKETS.

COVENT GARDEN, OCTOBER 7.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms...	4 0-6 0	Marguerites, per 12 bunches...	2 0-4 0
Asters, 12 bunches	3 0-6 0	Mignonette, per doz. bunches...	2 0-4 0
Bouvardias, per bunch...	0 4-0 6	Myosotis, or Forget-me-Not, 12 bunch	1 6-3 0
Carnations, pr. doz. blooms...	0 9-1 6	Ochids...	
per doz. bun.	4 0-6 0	Cattleya, 12 blms.	12 -18 0
Chrysanthemums, p. doz. blooms	0 6-2 6	Odontoglossum crispum, 12 blms.	1 6-0 0
per doz. bunches	3 0-6 0	Pelargonium, scarlet, per 12 bun.	3 0-4 0
Cornflowers, per bunch...	0 3 -	per 12 sprays...	0 4-0 6
Dahlias, 12 bunches	1 6-4 0	Pyrethrums, 12 blms.	1 6-2 6
Eucharis, per dozen	2 0-4 0	Roses, Tea, per doz. blooms...	0 6-1 0
Gardenias, per doz. blooms...	1 0-2 0	yellow (Pearls), per dozen...	1 6-4 0
Gladioli, various, per doz. bunches	6 0-18 0	red, per dozen...	0 9-1 0
Lilium Harris, per doz. blooms...	2 0-4 0	pink, per doz...	1 0-2 0
per doz. bunches	2 0-4 0	Safrano, p. doz.	1 0-2 0
Lancifolium, per doz. blooms	1 6-2 0	Roses, per dozen bunches...	3 0-6 0
Lily of the Valley, dozen sprays...	1 0-2 0	Stephanotis, dozen sprays...	3 0 -
Maidenhair Fern, per 12 bunches...	4 0-8 0	Tuberose, 12 blms.	0 3-0 4
		Violets, 12 bunches	1 6-2 0

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Evergreen shrubs, in variety, doz...	6 0-24 0
Aspidistras, per doz.	12 0-30 0	Ficus elastica each	1 0-7 6
per specimen, each	5 0-15 0	Ferns, small, doz...	1 0-2 0
Asters, various, per doz.	2 6-5 0	various, doz.	5 0-12 0
Chrysanthemums, p. doz. pots	5 0-9 0	Foliage plants, doz.	12 0-36 0
per specimen, or large plants, ea.	1 6-2 6	Fuchsia, per doz...	4 0-6 0
Coleus, per doz.	2 0-4 0	Heliotropes, dozen	3 0-4 0
Dracenas, each	1 0-7 6	Lilium, various, per dozen	9 0-12 0
various, p. doz.	12 0-24 0	Marguerites, p. doz.	6 0-9 0
Erica, various, per dozen	9 0-18 0	Mignonette, p. doz.	4 0-6 0
		Palms, various, ea.	2 0-10 0
		per specimens, ea.	10 6-84 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Dessert, in variety, p. bush.	6 0-10 0	Peaches, selected fruits, per doz.	6 0-8 0
per Culinary, in variety, per bush.	3 6-5 0	Medium, p. doz.	2 6-3 0
Blackberries, peck	1 6-2 0	Second, per dozen...	1 6-2 0
Damsons, 4-bushel	7 6-8 0	Pears, various, per bushel...	4 0-10 0
Figs, per doz.	1 0-2 0	small, bush.	2 0-3 0
Grapes, Gros Colmar, per lb.	1 6-2 0	stewing, per bushel...	2 6-4 0
per Gros Maroc, lb.	1 0-1 6	dessert, per bushel...	4 0-10 0
Alicantes, p. lb.	1 0-1 3	California, B. Hardy, p. case, about 4 dozen	9 6 -
Hamburgs, selected, per lb.	1 0-1 6	D. de Co-mice, p. case, about 4 dozen	8 0 -
2nd qual, lb.	1 0 -	Pine-apples, St. Michael, cases containing 6 to 8...	4 6-5 0
Muscats, "Canon Hall," p. lb.	2 0-4 0	cases containing 10 to 12...	1 6-2 0
Channell Islands per lb.	0 6-0 9	Plums, Bullace, p. half-bush...	3 6-4 0
Muscats, selected, per lb.	2 0-2 6	Prune, 4-bushel, Walnut, shelled, p. half-bush...	8 0-9 0
Muscats, 2nd quality, per lb.	0 9-1 3		
Melons, each	0 6-1 6		
Nuts, Cobs, per 100 lb.	18 0-21 0		
Oranges, S. Australian, p. case, containing 120 fruit	10 0-12 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	2 0-2 6	Mushrooms (Indoor) per lb.	1 0 -
Beans, Scarlet Runners, per bushel	1 6-2 6	(Outdoor), per lb.	0 4-0 8
Beetroots, p. bush.	1 9-2 0	Salad, small, per doz. punnets...	1 6 -
Capsicum, Chili, p. 100...	1 6 -	Shallots, per lb.	0 2 -
Cauliflowers, dozen	2 0 -	Sprouts, per 4-bush. Tomatoes, selected, per doz. lb.	2 0-2 6
Cucumbers, home-grown, select, per doz.	2 0-3 0	Medium, do.	
2nds, per dozen	0 9-1 0	Second, do.	
Garlic, per lb.	0 2 -	Channel lands, per fl.	
Marrows, per tally	5 6-6 0		

POTATOES.

The finest sample Potatoes descriptions show no change—Snowdrops, 75s. to 95s.; Magnums, 65s. to 75s.; Bath, 32 and 34, Wellington

(Markets ca)

"NATURE."—We are requested to state that on and after Tuesday, October 12, the editorial and publishing offices of *Nature* will be removed to St. Martin's Street, London, W.C., to which address all communications should be sent.

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.		
	Above (+) or below (-) the Mean for the week ending October 2.	ACCUMULATED.			More (+) or less (-) than Mean for the Week.	No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
		Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 3, 1897.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.				
0	2 +	62	0	+ 156 - 5	2 -	172	31.4	22	30
1	2 +	65	0	+ 5 + 17	4 -	157	22.1	26	33
2	1 +	76	0	+ 73 - 78	1 +	140	18.8	29	35
3	2 +	94	0	+ 162 - 124	7 +	137	18.8	26	39
4	2 +	80	0	+ 96 - 116	3 +	136	21.5	31	37
5	3 +	107	0	+ 222 - 180	1 -	130	21.3	36	40
6	2 +	74	0	+ 70 - 17	5 -	167	33.0	32	38
7	1 +	82	0	+ 128 - 92	1 +	155	25.9	32	36
8	2 +	93	0	+ 220 - 138	1 +	162	33.1	41	40
9	2 +	80	0	+ 16 + 8	4 -	181	30.6	29	31
10	2 +	88	0	+ 126 - 58	2 -	170	32.8	31	33
*	2 +	118	0	+ 320 - 80	1 +	172	27.5	35	42

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

NOTICES TO CORRESPONDENTS.

ARALIA: B. & Son. The creatures which are swarming on the leaves belong to the genus *Tarsonemus*, a very small Acarus; but in spite of its minuteness, it is most destructive, and is very difficult to get rid of, because it is a leaf-mining thing, and it is almost impossible to reach with any chemicals any except the few that are wandering outside. Fumigation would be useless; the best thing to do is to carefully burn all infected plants, and all debris and stuff that has been near them, and to keep on doing this. But if you are unwilling to do this, you might try spraying upward, so as to wash the undersides of the leaves, at frequent intervals, either with paraffin solution or cresote solution, without soap, so that it may penetrate as much as possible. *Albert D. Michael.*

BOOKS ON FRUIT CULTURE: C. F. R. If you require manuals on the out-of-door cultivation of fruits, you should obtain *Fruit Culture for Small Holdings*, by J. Cranston (Hereford: Messrs. Jakeman & Carver); or *Fruit Farming for Profit*, by G. Bunyard (Maidstone: Frederick Bunyard, 29, Week Street). For Vine culture under glass obtain *Vines and Vine Culture*, by A. F. Barron, 2nd edition, to be purchased of the author, 13, Sutton Court Road, Chiswick.

ULIAS.—Any limitation of the number of varieties must, of course, be an old Juarezi was styled a nurse, in some measure, it some kinds of Cactus crossings, this character to many other view these National certificate

is awarded to a seedling variety in the Cactus section, the blooms must exhibit the peculiarity referred to above in an unmistakable degree. Any that do not do this, and are not "show" varieties, are relegated to a section known as "decorative" Dahlias, though they may have resulted from a cross in which one or even both parents were known as Cactus-flowered sorts. We see no objection to this, because in order to introduce as much variety amongst Dahlias as possible, the peculiarities of each type should be developed as much as possible. The same difficulty has arisen in the case of incurved Chrysanthemums. Of course a nurseryman may, for his own purposes, classify a variety as he chooses. The blooms you send of your new Dahlia Queen Victoria are purer white than any Dahlia we have previously seen. The stems are long, the habit good—indeed, better than any other white Dahlia we can call to mind; but it may not be sufficiently Cactus-like to be classed as such by the florists. For our own part, we should describe it as the best white flowered decorative Dahlia existing.

CALVARY CLOVER: *W. T.* *Medicago echinus.*

CARNATIONS: *L. B.* Your leaves are badly affected with the rust-fungus (*Helminthosporium echinulatum*), see *Gardeners' Chronicle*, August 21, 1886. It is very likely to spread. Burn all affected leaves immediately, and spray the healthy plants with weak Bordeaux Mixture or weak Condry's fluid, as a preventive.

CHRYSANTHEMUMS ATTACKED BY A RUST: *H. R., Col. B., Constant Subscriber, and others.* The same disease as that of "A Constant Subscriber." It is a rust, and is called *Uredo Hieracii*. It is useless to apply sulphur; but, perhaps, if the under-surface of the leaves could be syringed with Condry's Fluid, as was recommended in the *Hollyhock* disease, it might be beneficial; but we fear that no cure has yet been found. *M. C. C.* [See also an article on p. 256.]

CHRYSANTHEMUM ROOTS DESTROYED: *G. S.* The grubs present in the soil are those of the Daddy-longlegs. See answer to *GRUBS*, *W. Lewis*, p. 244, in last week's *Gardeners' Chronicle*. You should use a soil quite free from the grubs.

DAHLIA SPORTS: *A. B.* Grow each of them another season, and you will be better able to estimate their value. There are already varieties having white petals margined with yellow. In your flowers the ray-florets or ligules have two supplementary petals. This is interesting as showing the true conformation of the floret which really consists of five petals united, though apparently one only is fully developed. That one is really three fold, so that the additional two in your specimens make up the five. If you could succeed in increasing the size of the two additional petals, you would get a startling novelty.

DESTRUCTION OF CABBAGES: *H. H.* Grubs of Cockchafer; dig up the soil, leave it open, and encourage rooks and starlings.

FIG LEAVES DISFIGURED: *S. C.* The Fig leaves appear to be in a bad state, but from them we cannot determine what ails the tree. There is no positive fungoid disease, although the spots resemble those caused by *Uredo ficis*, which has not yet been recorded in Britain. We fear it is rather an error in cultivation than organic disease. *M. C. C.*

FUNGUS: *Agaricus.* The edible *Agaricus rachodes*.

INSECTS: *Allerton.* We do not know what insect has eaten your *Rhododendron* leaves. Send us the culprit and we will endeavor to name it for you.

RISH PEACH-APPLE: *R. W. R.* The tree bears at the extremities of the shoots, and should be pruned accordingly, and not like other Apples that bear on short spurs for a considerable distance along the branches.

KALES ROTTING: *G. A.* The plant of which a part is sent is probably affected by a slime fungus, *Plasmodiophora Brassicae*, the same which is the cause of Club-root, Finger-and-Toe, &c. The spores remain in a resting state in the Cabbage, Turnip, &c., during the winter, and in the spring they are ripe and ready for germination; hence the necessity to get rid of every infected plant, leaves, root, stem, and all by burning as soon as it is noticed. To leave Club-root refuse on the ground or throw it on the dung-heap is a certain method of propagating the disease. You must not crop the land with Brassicas for at

least three years. Professor Jamieson, some years ago, advised cultivators not to use manures containing sulphur and chlorine; the one given usually as sulphuric acid and sulphate in dissolved or soluble manure; the others, in chloride, muriate of potash, and in common salt, the fungus spores finding sustenance in the sulphurous materials. Do not therefore use superphosphate of lime. Do not let Charlock grow about the garden, it being also liable to attack from the same species of fungus.

LYCUM BABARUM: *W. T.* Introduced in 1696, and probably cultivated in the Duke of Argyll's garden at Whitton. We have never heard of its use as tea in modern times.

MELONS: *F. G. G.* There is no evidence of Bacteriosis at present in your Melon stems, but it may be an incipient form of that disease. We can find no mycelium in the discoloured tissues. The appearance of the stems is very like that of the Sclerotium disease of Potato haulms, described and figured in the *Gardeners' Chronicle*, which disease we have also recorded as attacking the stems of Cucumbers. As the disease is internal, we can suggest no remedy. *M. C. C.*

MUSHROOMS: *A. M.* No, certainly not a Mushroom; but the specimens were not packed with sufficient care to enable us to determine them.

NAMES OF FRUITS.

*Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Delay in any case is unavoidable.

F. F. Ross, Finchley. 2, Blenheim Orange; 4, do.; 21, do.; 3, Court of Wick; 9 and 37, Fearn's Pippin; 22, Landsberger Reinette; 19, Golden Noble; 34, King of the Pippins; 23, 25, 27, 28, 44, Dumele's Seedling; 9, Scarlet Pearmain; 26, 50, Alfriston; 21, Pine-apple Russet; 20, Blenheim Orange; 51, Ribston Pippin; 47, Ecklinville; 48, Cox's Pomona; 49, Golden Noble; 32, Braddick Nonpareil. Pears are both Catillacs. We only undertake to name six varieties at any one time. You have been inconsiderate enough to send sent us no fewer than forty; of these we name about one-half. As you have so greatly exceeded the number, and put us to so much trouble and loss of time, the least you can do is to give a small amount to the *Gardeners' Orphan Fund*.—*M. Dixon.* 1, Old English Codlin; 2, Frogmore Prolific; 3, Royal Somerset; 4, Lane's Prince Albert; 5, Bess Pool.—*E. C.* 1, Lord Grosvenor; 2, Colonel Vaughan; 4, Beurré Bachelier; 5, B. Clairgeau; 6, Marie Louise d'Uccle.—*J. Russell.* 1, Beauty of Kent; 2, Round Winter Nonsuch; 4, Striped Beefing; 5, King Pippin.—*W. J. Bligh.* Two of the Apples are Warner's King, but we can find no numbers to the fruits.—*M. F.* Your Pears are too much over-ripe and bruised for us to determine.—*H. C.* Please send another specimen.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*Melville.* *Colutea arborescens* (Bladder Senna).—*Alloy.* *Acer Negundo*.—*C. B.* *Glechoma hederacea*, the variegated variety.—*G. P.* We are not able to name your variety, which, however, looks like the white Clove.—*C. W.* 1, *Berberis stenophylla* ×; *Berberis empetrifolia*; *Pyrus*: 1, *Pyrus intermedia*; *Acer*: 5, is *A. circinnatum*. It is not possible to name the species of *Philadelphus* from leaves only.—*W. B.* 1, *Ligustrum lucidum*; 2, a species of *Ash*, *Fraxinus*, which we do not recognise; 3, *Rhus Cotinus*; 4, *Ruscus hypophyllum*; 5, *Euonymus europæus*, common Spindle-tree.—*P. C. P.* *Escallonia illinita*.—*A. P. H.* *Eria convallarioides*.—*J. J. J.* The true Service-Tree (*Sorb.*) is *Pyrus Sorbus*, a very different plant, with pinnate (not simple) leaves, like those of a Mountain Ash. Your tree is *Pyrus auricularis* (*P. Bollwylliana*), a natural hybrid between the Pear (*Pyrus communis*) and the White Beam (*Pyrus Aria*).—*J. A.* We cannot name the variety of *Clematis*.—*Barr & Sons.* *Diospyros virginiana*.—*Japonica.* 1, *Thuya orientalis* variety, perhaps the one known in nurseries as *japonica*; 2, *Crataegus tanacetifolia*.—*O. G. H.* *Cape Town.* *Abutilon megapotamicum*.—*Jas. F.* 1, *Cotoneaster frigida*; 2, *Platanus orientalis*; 3, *Kölreuteria paniculata*;

4, *Quercus Phellos*; 5, *Staphylea pinnata*; *Quercus rubra*.—*W. H. M.* 1, *Polygonum*; *Actinidia*; 3, *Actinidia*; 4, undeterminable; *Acer Negundo*; 6, *Acer rubrum*; 7, *Acer rubrum*; 8, *Alnus glutinosa lacinata*; 9, *Cimicifuga c. folia*; 10, *Myrtus apiculata*; 11, *Abelia unifl.* 13, *Eupatorium odoratum*; *Rondeletia speciosa*, a *Ceanothus* without numbers. The specimens are very poor ones, and most of them unaccompanied with flowers.—*Norwood.* Rose, *Madame Pierre Cod*.—*J. M.* *Poterium caudatum*.—*P. A.* *Wokingham.* Your two grand spikes of *Dendrobium Phalaenopsis* *Schroderianum* represent one of the best varieties of that favourite Orchid which we have seen. They are also the best spikes seen this season, and the good cultivation necessary to produce so reflects great credit on the grower.—*G. W.* Yours is *Dendrobium Phalaenopsis* var. *delicata*. It could not be called "white." The leaf and flower are those of *Cyrtodeira* (*Episcia*) *fulgidula*. *S. L.* *Catasetum viridi-flavum*.

PEARS DEFORMED: *C. D., E. M. H., and others.* The true fruit of a Pear is the core; the edible portion is only a dilated condition of the flower-stalk. In your specimens, for some reason which we do not know, the true fruit or core is not formed, but the thickened flower-stalk has taken on fresh growth and thus arises the appearance of two Pears, one coming from the other. Such changes are common and have often been figured in our columns. The term "freak of Nature" is quite inapplicable. "Nature" is not capricious; there is a purpose in all her work, though we are sometimes too blind or too ignorant to see it.

"PIPLESS" FRUIT: *G. L.* We do not believe there is any treatise on the production of pippless Orange Apples, Grapes, &c. The condition arises either from abortion or incomplete fertilisation.

PLUM TREES: *A. F.* Do not prune over-much, but get the trees into bearing by transplanting, and doing this, bring all roots to within from 4 to 6 inches of the surface. Remove tap-roots, and shorten the longest horizontal ones somewhat. Afford the trees no manure, but add some good sound fresh loam and mortar-rubble to the step and see that the border is not water-logged.

POTATO: *W. H.* Nothing unusual.

SCOLOPENDRIUM VULGARE VAR. CRENATUM: *H. C. Geneva.* This variety frequently bears the spots on the upper surface; the scurfy veins seen on the margins of the incisions, develop the spots more or less on both sides of the foot. *C. T. D.*

SEEDLING FIG TREES: *A. F.* It may be many years before your trees will bear fruit if left in the ground; better keep them in pots not exceeding 8 to 10 inches in diameter, potting them firmly in loam, cutting them back in late winter, and fruit them in an intermediate house.

SPARROW-TRAP: *Swanley.* You should enquire the Horticultural Sundriesmen.

VINE FOLIAGE, SHOOT, AND FRUIT: *J. S.* Vines have been over-cropped probably, and are wisely mismanaged; but the size of the bunches, individual berries, and the stoutness of the foliage show that the Vines, under more skilful management, with perhaps some renovation of the buds and a rich annual top-dressing, will give an account of themselves another year.

COMMUNICATIONS RECEIVED.—*Col. B.*—*B. S. W.*—*Dr. Ceschi*—*Santa Barbara, Cal.*—*E. M. H.*—*H. N.*—*E. W. A. P. H.*—*A. M.*—*J. R.*—*J. R.*—*A. H.*—*W. H.*—*A. Dr. Williamson*.—*G. St. P. Harris* (you should written earlier).—*I. R.*—*A. H. M.*—*Stockholm*.—*W. Soupert & Notling, Luxembourg*.—*D. T. F.*—*W. C. N.*—*A. H.*—*J. R.*—*J. E. W.*—*B. H.*—*E. M. A. H. M.*—*Stockholm*.—*D. T. F.*—*T. W.*—*J. B. D.*—*C. T. Simcoe*.—Vine (kindly furnish name and address).—*W. Smythe*.—*T. B.*—*D. R. W.*—*T. H. S.*—*J. R. A.*—*J. R. P. & Sons*.—*A. D. J.*—*R. R.*—*M. C. C. R.*—*H. H.*—*J. J.*—*Son*.—*E. F. T.*—*S. H. G.*—*J. C. H.*—*J. F. W. D.*—*J. Griffin* (next week).

PHOTOGRAPHS RECEIVED.—*D. T. F.*
SPECIMENS RECEIVED.—*C. N.*—*E. D.*

CONTINUED LARGE INCREASE in the CIRCULATION of the "GARDENERS' CHRONICLE."

Important to Advertisers.—The Publisher has the honor of announcing that the circulation of the "Gardeners' Chronicle" has, since the reduction in the price of the paper, MORE THAN DOUBLED, and that it continues to increase week after week. Advertisers are reminded that the "Chronicle" circulates among GENTLEMEN, AND ALL CLASSES of GARDEN-LOVERS at home, that it has a special FOREIGN AND COLONIAL CIRCULATION, and that preserved for reference in all the principal Libraries.



THE Gardeners' Chronicle.

SATURDAY, OCTOBER 16, 1897.

PLANTING FRUIT-TREES.

MUCH valuable information in reference to the planting and culture of fruit-trees has appeared in the pages of the *Gardeners' Chronicle*, but every year brings fresh readers who are seeking instruction, and it seems only fair to attempt making some return for useful knowledge gained by communicating a little from our own experience. To review the whole subject of fruit-planting would occupy more space than the editor would care to devote to one subject, however important it may be, therefore we will glance at a few of the chief points.

Differences of opinion exist as to the best season for planting, a few maintain that spring-planting gives the best results; more regard the whole season from autumn until spring, i.e., October to March, as suitable when the weather and soil conditions are right, and a large number are distinctly in favour of autumn-planting. Amongst the last-named, I must include myself for reasons which experience confirms more fully every season. My opinion is founded upon observation with many thousands of trees which have been planted at various times, and under diversified conditions, and the results have been so uniform that it may perhaps be excusable if confidence is strong in the method adopted. Large numbers of trees have been planted in different, and sometimes unfavourable soils, and subjected to trying weather conditions for a year or two after, with a maximum loss not exceeding one per thousand in any case, and in most instances without a single loss. On the other hand, spring-planting has been most uncertain, sometimes the losses have been few or more, but, occasionally, the results have been very discouraging.

If planting can be commenced in late October or November—as soon, in fact, as the leaves have fallen—the roots injured in lifting heal more readily than at any other time; the trees have time to partially overcome the effects of transplanting before the heat and drought of spring or summer come upon them. When, however, the planting is intentionally or unavoidably delayed until spring, the buds often start before the roots are prepared to supply their demands, exhaustion, and perhaps death, following. Still, apart from the actual time chosen for the work, the weather and soil-conditions require the closest attention, for I have no hesitation in saying that good or bad results depend more upon these than upon anything else. The greatest skill and care avail but little if heavy soil is being dealt

with, and planting is attempted when it is wet and clogs round the roots. In some clayey soils the clods will dry into hard lumps like pieces of half-baked brick, either encasing the roots, or presenting an impassable barrier to their progress. Even the holes that are dug under such conditions have the sides cut sharp and smooth by the spade, and will commonly form a kind of basin, which will retain water for a long period in wet weather, and is almost as impenetrable to roots as the sides of a flower-pot. It seems scarcely possible that so little judgment could be exercised as to attempt planting in this way, yet it is unquestionably done, as several deplorable examples have come under my own observation. In one instance I was called in to investigate the cause of a number of young Apple and Pear-trees not thriving, and a pitiable spectacle they presented. They had been planted two years, but none had made more than an inch or two of weakly, pale growth; some branches were dead, and in other cases the whole tree was obviously dying. Upon lifting a few of them, the chief cause was apparent, they had been planted when the soil was wet and pasty, and being of an adhesive character, it had set hard round the roots, which had been quite unable to make any progress. By carefully lifting the whole of these trees, and well pulverising the soil when it was sufficiently dry, incorporating a good proportion of fertile friable soil, trimming and spreading the roots, and cutting-in the branches, a considerable improvement was effected, and the following season fair growth was made. The stunting effect of bad treatment upon young trees is not, however, very quickly recovered from entirely; indeed, in some instances and with delicate varieties the evil effects can be traced throughout the life of the tree. Another deplorable instance of failure with a large plantation of Pears came under my observation which was undoubtedly partly due to the same cause as the above, the other portion of the evil effects being the result of an unfavourable situation.

The preparation of the land for the reception of fruit-trees is also an important matter too often overlooked or imperfectly performed, and though we are here referring more particularly to cases where plantations to some extent are about to be formed, yet the care advised is equally needed if only a few trees are to be planted. The first consideration is the thorough breaking up of the soil, which is best effected by means of trenching, at least for the stations the trees are to occupy; ordinary ploughing is of little use, not because a great depth is required for the roots, but because it is necessary to ensure effectual surface drainage, to increase the air containing capacity, and consequently the warmth of the soil. In a cold soil laden with stagnant moisture, tree-roots can make but little satisfactory progress, and the branch-growth will correspond; indeed, it is not recognised sufficiently how much the one is dependent upon the other. Coarse roots produce rank branches, and stunted roots result in impoverished stem growth. I have often when lifting or transplanting been struck with the resemblance between the two portions of a tree: strong downward-going roots being associated with vigorous upward stem-growth, while abundance of horizontal fibrous roots commonly have a corresponding spreading stem habit.

In the case of all soil of a doubtful or unknown composition, it is, however, judicious to keep each layer in its respective position; in other words, to avoid bringing the lower soil to the surface or where the roots of the trees are to be placed. I have seen such disastrous results follow inattention to this, that I consider it a matter which cannot be too strongly impressed upon learners. Wherever it is desired to

increase the depth of surface soil, portions of the lower layers must be brought up gradually, and then only when the land is being cropped with strong-growing vegetables.

As a means of preparing rough imperfectly cultivated soil for fruit trees, and for cleansing ground that is infested with weeds, it is a wise precaution to crop it with Potatoes the summer before planting is intended to be commenced. Where this is done, however, the land should have a liberal application of stable or artificial manure, as Potatoes use up a quantity of potash, the very constituent that is of much importance to fruit trees. Clearing the ground is a first consideration, for it is the extremity of folly to plant trees where the operation of hoeing or weeding will be a most difficult one for years, particularly if "twitch" should be present. With the latter weed, in fact, it is essential to deal most thoroughly in the direction of extermination prior to planting, Bell-bine, Thistles, and Docks being scarcely less troublesome. Unless there are many other advantages in its favour, I should never plant a piece of foul land with fruit trees; but occasionally there may be no choice, and the only alternative is to render the land as clean as possible by persevering labour.

The question of distances and arrangement is an important one, and it is not surprising there should be some divergence of opinion respecting it. When land is closely cropped with bush fruits or Strawberries, in addition to the Apples, Pears, or Plums that form the staple, the difficulties of cultivating and cleaning the land are greatly increased; on the other hand, if we do without what may be termed under-crops, the producing power of the land is materially decreased, unless some intermediate crops can be taken while the trees are growing into bearing size. Early returns have to be balanced against reduced cost of cultivation, and where the fruit plantation is the main source of the grower's income, the former consideration will predominate; but where it is only adjunct to some other occupation, it may possibly suit the fruit-grower to adopt the second method. It may also be to some extent a question of means, for the capital expenditure on a large plantation in which small fruits are included would be more than doubled if all the bushes, &c. have to be purchased. For standard Apples a less distance apart than 20 feet cannot be allowed, and then only for small-growing varieties, while 24 to 30 feet are preferable in all respects. I do not however advocate tenants planting standard Apples. The owner of a piece of land who wishes to increase its permanent value may do well in planting standards, for the number per acre is not large at the distances named, but a lessee or land-holder, on more uncertain tenure, can better secure a quick return for his outlay and labour by planting dwarf-trees. That at least is my experience, and that it has proved equally desirable in many other cases I am well aware. Dwarf-trees too can be placed at 7 to 12 feet apart according to the habit of the variety, and the future plans of the grower, and a large number per acre can thus be arranged for.

As to methods of arrangement, there is none on the score of convenience for working and good appearance to rival planting at equal distances between the rows and between the trees, so that the trees are in squares, thus admitting of working the land up the rows, and again at right angles. When accurately distanced, this method also gives a beautiful effect as the trees advance, for they come into lines in so many different directions.

Whether stakes should be employed or not will depend upon the form of trees planted, and the position; but perhaps more upon the latter than anything. In sheltered places I have planted standards without stakes that have made as good progress, and have their stems as straight as those that have been most carefully staked in more exposed spots; but in a general way the expense and trouble of staking should always be incurred for standards. With dwarf trees it is not always needful—indeed, it may be said that only in exceptional cases of great exposure is it essential.

As to the most desirable depth for planting fruit,

there cannot be much difference of opinion, for the slightest experience shows that in all soils of a fairly retentive nature, planting at any depth below the nursery-mark is productive of much mischief; where the soil is light, deep, and equally good in the lower layers, slightly deeper planting may be the means of preventing too much exhaustion by summer droughts. In heavy soils resting upon clay, or other unfavourable sub-strata, I always place the roots as near the surface as will admit of their being adequately covered with soil; indeed, in some extreme cases, planting upon the surface and mounding over the roots, has proved preferable to the conventional system of "digging a hole." Whatever system is adopted, two points are essential, one being to trim off all jagged or injured roots with a sharp knife, and the other is to spread the roots evenly and horizontally. If the occasion should arise to examine the cut-roots a year or two after planting, the effects will be seen in the thorough healing and production of fibrous roots from the ends, a multiplication of "feeders" most useful to the tree. With regard to the other practice, the chief object is to prevent the roots extending downwards, and to keep them in some measure under control; every interstice being filled with pulverised soil, as great gaps between the roots are decidedly antagonistic to their progress.

The question of varieties has not been entered upon in these notes, first, because it would require an article as long as this to deal with it thoroughly; and secondly, because the selection for market purposes must depend upon so many circumstances that the intending planter has often to be guided by local knowledge. *Practitioner.*

NEW OR NOTEWORTHY PLANTS.

LÆLIA PUMILA "GATTON PARK VARIETY."

In the *Gardeners' Chronicle* of January 2, 1897, p. 11, the pure white *Lælia pumila* alba, "E. Ashworth," was illustrated, and now there has appeared in the gardens of Jeremiah Colman, Esq. Gatton Park, Merstham, Surrey (gr., Mr. King), an extraordinary coloured variety well worthy to rank with the first named. So thought the Orchid Committee of the Royal Horticultural Society when they awarded a First-class Certificate to the plant (fig. 79) at the Drill Hall meeting on September 21 last.

In size and form, the flowers are identical with those of *L. pumila*, but it is novel in colour, its sepals and petals being white suffused with a decided blue tint. The labellum also is tinged with various shades of blue, which deepen in the anterior portion into light bluish-purple. *J. O'B.*

EULOPHIA WENDLANDIANA, Kral. (§ PULCHRAE).*

This is yet another discovery of the late Johannes Braun during his last visit to Madagascar. The plant most resembles *Eulophia pulchra*, Lind., *E. alimatifolia*, *E. megistophylla*, *E. sclerophylla*, Rohb. f., and other species, all described by Reichenbach; but on the other hand it recalls *E. euglossa*, Lindley, a

plant of western African origin. In colour and habit it resembles a good-sized *E. pulchra*, but the middle lobe of the lip is longer and narrower than in that species, without the slightest trace of becoming bilobed itself, as is the case in all the other species of this group. The margin of the middle lobe is slightly waved, as are the two larger, and the adjacent two smaller elevated lines or crests on the disc of the lip. It is after all, a *Eulophia* with an affinity to *E. pulchra*, with some traces of *E. euglossa*. The flowers are not of great beauty; they are nearly 1½ inch in diameter; the petals are coloured pea-green, the oblong, blunt petals pure white, and the lip is green profusely tinted with amethyst. *F. Kröplin.*

FRANCE.

M. LEMOINE'S NURSERY AT NANCY.

(Continued from p. 249.)

In the beginning of this note we alluded to the wonderful collections of herbaceous plants and bulbous plants to be met with in this nursery, and

Among other shrubs mention may be made of *Panax sessilifolium*, with compound leaves and large compact balls of black berries, greatly resembling those of Ivy, but much larger. A glaucous variety of *Sambucus racemosa* is pointed out, and a feathery *Tamarix*, known as *T. kasgarica*. It is very like its congeners, but has the useful quality of flowering even late in September. *Rosa calocarpa* × is a hybrid from *R. rugosa*, and laden as it was with its orange-scarlet berries, it formed a most ornamental bush. *Aronia erythrocarpa* is remarkable for its deeply coloured leaves and pear-shaped black berries, and *Fraxinus rhyucophylla* is noted as a fine and distinct member of the genus.

A hybrid between *Clematis Davidiana* and *C. stans* shows the erect habit and the masses of tubular lavender-coloured flowers characteristic of this section, and is looked on with favour by M. Lemoine.

Eulalia gracillima is a very ornamental grass of the first magnitude, with a dense profusion of elegant linear leaves, each marked with a white stripe in the centre.

Berberis Knighti is noted as having been nearly lost to English gardens. *B. virescens*, *B. Thunbergii*, with its deeply coloured leaves and an endless series

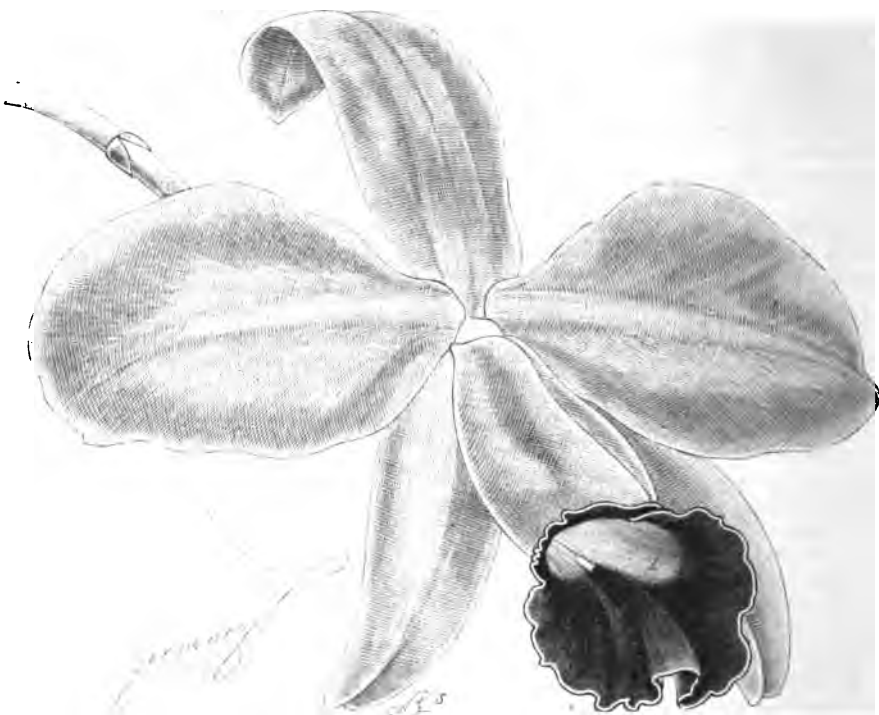


FIG. 79.—LÆLIA PUMILA, "GATTON PARK VARIETY."

Sepal and petals pale mauve-blue; labellum pale mauve-blue, with a deep mauve-blue lip, beautifully bordered with a fine white line.

* *Eulophia Wendlandiana*, Kral. (§ *Pulchrae*). — Tuberiditis crassatis 6 cm. longis, 3 cm. diam., internodiis 6—7 compositis; foliis e tuberidio juniores orientibus 3—4, foliorum petiolis arcuatis plicatis 9—10 cm. longis, foliis ipsis ad 60 cm. longis, 3—5 cm. latis, lanceolatis acutis acuminate nervis 3 v. 5 infra valde prominulis; scapo multoties longiore ad 75 cm. alto, cataphyllis 3 magnis longe vaginantibus inflatis acutis vestitis (maximo 6.5 cm. longo); racemo longissimo (40 cm.) plurifloro distantifloro (minime paniculato); bracteis infimis linearibus quam ovaria subbrevioribus supremis multo minoribus ovaria e pedicellis 3—3.5 cm. longis; sepalis late linearibus acutis pallide viridibus 2 cm. longis, 3 mm. latis; petalis oblongis obtusis apice rotundatis, 1.5 cm. longis, 6 mm. latis, albis; labelli subbrevioris lobis lateralibus semi-oblongis v. semi-lunatis supra rotundatis intermedio late oblongo antice obtuso simplici neque emarginato neque sub-bilobato; callis basilaribus 2 inter lobos laterales, continuis cum lamellis 2 majoribus crenulatis, addita utrinque una multo brevior apicem fere usque decurrentibus; calcaris dimidium labelli requante complanato obtuso apice non didymo; labello viridi disco albidio callis basilaribus albis; lamellis disco anteriore calcaris amethystinis; gynostemio leviter curvato, utrinque marginato dorso carinato; anthera supra in processum carnosulum satis latum apice emarginatum acuta. In Madagascar det. et misit beatus Joh. Braun.

more especially to the extraordinary results obtained by M. Lemoine by hybridisation, cross-breeding, and careful selection. To go into details is impracticable, but we may just add a few particulars relating to trees and shrubs; and first we may mention that the Lilas de Varin, or Rouen Lilac, concerning whose origin much doubt has been expressed, and which was at one time even supposed to be a native of Siberia, has been proved to be a hybrid between a semi-double form of the common Lilac, *S. vulgaris*, and the out-leaved form of Persian Lilac, *S. persica laciniata*. *Solvitur ambulando*. The hybrid has been produced in these nurseries from the parents just mentioned. Many of the newer Lilacs originated in this establishment, and we saw many more coming on, but not yet in a state for further mention. The same remark applies to numerous varieties of *Deutzia*, *Ceanothus*, and *Philadelphus*, which were not in bloom at the time of our visit.

of hybrids, were observed the characters of which would take a long time to describe.

A hybrid *Gazania* between *G. splendens* and *G. nivalis* is pointed out. If some of these cross-breeds are not in appearance superior to their parents, they may, and often do, possess qualities which enable them to be grown under conditions and circumstances which are unfavourable to the parents.

Dimorphotheca Ecklonis is a fine *Gazania*-like Composite, which is kept cut back so as to secure a growth of young shoots, many of which flower at the tips.

Diplacus tomentosus is very like the old *D.* (*Mimulus*) *glutinosus*, but has pale saffron-coloured flowers.

But mere lists of names are devoid of interest, and we must await the return of the leaf and the receipt of specimens to describe the many other novelties or plants of interest here to be seen. In the meantime, let no plant-lover who has the chance miss the opportunity of visiting this unique establishment.

PRIMULA TRAILLI.

On April 27 I showed at the Drill-hall a new Primrose, *Primula Trailli*. I received the seed about two years ago from a friend, a good botanist, in the Himalayas, with injunctions to be careful with it, as the plant had not flowered in this country. He

low-growing Primroses. *Primula Trailli* is quite on a different scale, as I think you will see by the illustration (fig. 80). I took the measurements carefully: breadth of plant, $11\frac{1}{2}$ inches; height of the tallest stem, 16 inches; length of the leaf, $6\frac{1}{2}$ inches; expanded part of this 3 inches, the width of the last, $1\frac{1}{2}$ inch. It had ten flower-stems. The plant was

WALNUTS, ALMONDS, AND CHESTNUTS.

(Continued from p. 195.)

We have now to consider the constituents of the ash of the various parts of the fruit of the Californian-grown Walnut, Almond and Chestnut, with such European ash analyses as are available.

First we will quote the average composition of the ashes of the wood of the Walnut and Chestnut trees.

SELECTED CONSTITUENTS IN THE ASHES OF THE WOOD OF WALNUT AND CHESTNUT-TREES.

Constituents.	Walnut Wood.	Chestnut Wood.
	Per cent.	Per cent.
Potash	11.3	10.1
Lime	35.9	43.6
Magnesia	3.7	3.2
Phosphoric Acid	4.1	1.5

The results show that the Walnut-tree consumes more potash in the building up of its wood than does the Chestnut-tree; but on the other hand, the Chestnut-tree makes the largest demand on the constituent lime, there being a difference of about 8 per cent. Magnesia is very similar in the wood of both trees. Phosphoric acid is in greatest demand by the Walnut-tree, to the extent of over 3 per cent.

It is found that the wood of the Chestnut-tree and that of the common Oak are very similar in their chemical composition.

But now our chief care is to look to that part of the tree which is taken away from the orchard—the nut proper, the soil constituents of which must eventually be replaced by the addition of suitable fertilisers. In cases where the hulls and the leaves are returned to the soil, it will be the composition of the ashes of the nut alone, and not of the entire fruit, which will be the proper gauge of the replacement of plant-food necessary.

The following table gives the composition of the ashes of Californian Walnuts, Almonds, and Chestnuts, in the nuts (hulled), and in parts of the entire fruit:—

SELECTED CONSTITUENTS IN THE ASHES OF WALNUTS, ALMONDS AND CHESTNUTS.

The Quantities per Cent.

Constituents.	Potash.	Soda.	Magnesia.	Lime.	Phosphoric Acid.	Sulphuric Acid.
<i>Walnut.</i>						
Nut—hulled ...	19.96	0.83	11.40	23.83	37.17	2.17
Kernel	12.69	0.93	16.60	5.57	57.83	1.31
Shell	28.28	0.82	5.29	44.88	13.14	3.23
Hull	77.80	0.27	1.80	7.70	2.46	2.66
<i>Almond.</i>						
Nut—hulled ...	36.63	2.29	12.23	11.49	28.90	4.12
Kernel	10.96	1.85	18.31	14.53	48.13	4.64
Shell	64.76	2.81	5.54	9.12	7.76	3.55
Hull	64.86	0.74	5.28	4.10	5.62	1.32
<i>Chestnut.</i>						
Nut—hulled ...	45.07	1.70	9.24	8.32	23.10	10.84
Kernel	48.67	1.20	8.05	4.63	23.55	12.81
Shell	29.02	3.92	14.51	27.52	21.10	2.08
Hull	32.23	0.99	10.15	17.83	9.61	5.05

Some striking results are shown in the above table. We find, for instance, that the potash in the ash of the hulled Walnut comprises nearly 20 per cent. of the whole ingredients, while that of its hull alone is nearly four times as much, viz. 77.8 per cent. It will therefore be seen that if the hulls of the Walnut are not returned to the soil, the dominant ingredient of the fertiliser intended for replacement of plant-food must be potash; while if the hulls are left on the ground, the dominant constituent by far should be that of nitrogen.

The ashes of the various parts of the Almond and Chestnut, on the whole, show few such wide differences in potash as that above given, but still they differ much from each other.

It is an interesting fact that the ash of the kernel



FIG. 80.—PRIMULA TRAILLI.

described it as *P. Trailli*, *Watt*, Himalayas, 17,000 feet. In the note on the show in the *Gardeners' Chronicle*, May 1, p. 292, noticing its Award of Merit it is said, "the plant is evidently closely related to *Primula involucrata*." I have long grown what are sold as *P. involucrata* and *P. Munro*, these are much alike, and are both small

grown in a cold frame, and when the light was on, placed close to it, so that it has not drawn. The conclusion I came to was, that with some points of resemblance to *P. involucrata* and *P. Munro*, notably in the very sweet scent, it is essentially distinct, and a new Primrose that will be a valuable addition to the hardy plant garden. *G. F. Wilson*, *Heatherbank Weybridge*.

of the Walnut is, in weight, more than twice that of the shell, while in other nuts it is more nearly equal. Also, that in the kernel of the Walnut and Almond the phosphoric acid is very largely predominant over the potash, while the reverse is true in the ashes of the shell.

In the Walnut kernel, the phosphoric acid comprises nearly 58 per cent. of its ash. In the ash of the Chestnut, the potash is by far the predominant ingredient in both kernel and shell, and is largest in the kernel. The same is found to be true in the case of the European Chestnut. The soda in European Chestnuts is found to be considerably higher than in the Californian fruit.

SOIL INGREDIENTS WITHDRAWN BY NUTS.

From the foregoing data, relating to ash and nitrogen content, we are enabled to calculate the amount of soil-ingredients withdrawn by the growth of Walnuts, Almonds and Chestnuts. These amounts, expressed in pounds for each constituent per 1000 pounds of fresh nut, both hulled and not hulled.

SOIL INGREDIENTS EXTRACTED BY WALNUTS, ALMONDS, AND CHESTNUTS.

In 1000 lb. Fresh of—	Total Ash.	Potash.	Lime.	Phosphoric acid.	Nitrogen.
	lb.	lb.	lb.	lb.	lb.
Walnuts, hulled ...	7.50	1.50	1.81	2.78	10.20
„ not hulled ...	12.98	8.18	1.55	1.47	5.41
Almonds, hulled ...	15.00	5.49	1.72	4.33	16.40
„ not hulled ...	17.29	9.95	1.04	2.04	7.01
Chestnuts, hulled ...	8.20	3.72	0.71	1.89	8.00
„ not hulled ...	9.52	3.67	1.20	1.58	6.40

In the total quantity of mineral matters (ash) withdrawn from the soil, the Almond leads with 17 lb., the Walnut comes next with nearly 13 lb., and the Chestnut last, with 9½ lb. in 1000 lb. of the entire fruit. These figures become somewhat changed when referred to the hulled nuts.

Stone fruits have been found to come much below the above in total ash.

Potash.—The data for hulled-nuts shows that Almonds withdraw 5.49 lb. of potash, as against 3.72 lb. for Chestnuts, and 1.5 lb. for Walnuts, in 1000 lb. of fresh nuts; however, when these figures are referred to the entire fruit, the Walnut and Almond take about the same quantity—8 to 10 lb., or nearly three times as much as the entire Chestnut. Stone-fruits do not, on the whole, nearly approach these figures for equal weight of fruit.

Phosphoric Acid.—The Almond again leads in this constituent, withdrawing 4.33 lb., the hulled nut of the Walnut taking 2.78 lb.; and the Chestnut only 1.89 lb., per 1000 lb. of fresh nuts. These results are again all materially changed when referred to the entire fruit. For equal weights, stone-fruits appear to be very much less exhaustive upon the ingredient phosphoric acid than do nuts.

Nitrogen.—Again, the Almond leads with 16.4 lb., not nearly approached by the Walnut, with 10.2 lb., or the Chestnut with 8 lb. of nitrogen withdrawn per 1000 lb. of fresh hulled nuts. These figures, while materially altered by referring them to the entire fruit, are still very high, and indicate a great draft upon the soil—several times more than the Plum or Apricot.

As nuts carry away so large an amount of nitrogen, this constituent must necessarily be replaced in the soil if paying crops of fruit are to be continuously produced.

Thus, it appears that when nut orchards need fertilisers, the first call will ordinarily be for those manures rich in nitrogen. The need for phosphoric acid will probably not be felt so soon in a Nut-orchard as it would be in an orchard devoted to stone-fruits.

Chestnuts do not withdraw so much potash and phosphoric acid from the soil as do the other nuts; but they seem to demand that the soil shall contain sulphates, which are found in surprising quantities in the kernel of the nut.

FOOD VALUE OF NUTS.

All authorities agree upon the fact that Nuts are a highly concentrated form of food. Walnuts and Almonds possess a higher nutritive value than even the cereal grains; and, as compared with fruits, they rank high in food value, being a true seed only, and not made up of fleshy coverings, as the Apple, Pear, &c; they therefore have less water and a higher nutritive value generally, weight for weight.

Where, in a rational dietary system, other forms of food lack protein or albuminoids and fat, the Walnut and the Almond will supply, in concentrated shape, those needs; the Chestnut, with its high content of starch, sugar, dextrin, &c., may, on the other hand, be used as a substitute for the cereal grains or Potatoes.

Increased production will doubtless remove the obstacle of high cost of Nuts to the consumer; and in time, if demand arises, may bring the Chestnut at least into the list of staple foods for the human family. *J. J. Willis, Harpenden.*

ORCHID NOTES AND GLEANINGS.

PHALÆNOPSIS VIOLACEA ALBA.

THIS extremely rare albino of *P. violacea* is now in flower in Lord Rothschild's garden at Tring Park. The sepals and petals of this plant have not the slightest trace of the violet-purple hue of the typical form, but are of a clear French white. The side lobe and crest of the lip are tinged with yellow, and the whole flower has a semi-transparent, waxy appearance, rendering it very attractive apart from its interest as a rare plant. *J. O'B.*

ORCHID PORTRAITS.

CYPRIPEDIUM LAWRENCEANUM, var. *TRIEUATUM*, *Lindenia*, t. DLXXV.
DENDRABIUM SUAVISIMUM, *Lindenia*, t. DLXXIV.
MILTONIA VEXILLARIA, var. *VITTATA*, *Lindenia*, t. DLXXVI.
SCHOMBURGKIA THIBICENSIS, *Lindenia*, t. DLXXIII.

THE ROSARY.

POTTED ROSES FOR FORCING.

ALTHOUGH not so suitable for turning out into beds, or for continuous glass-house culture as some of the Teas and Noisettes, many of them are much valued for their fragrance, and for colours that are great contrasts to the soft shades of the Teas, such as Catherine Mermet, Niphetos, Perle des Jardins, G. Nabonnand, and others in pots. By cultivating the H.P.'s in pots, it is an easy matter to move them to some sheltered spot in the open as soon as the plants pass out of bloom; for, although named perpetuals, very few afford a second bloom to merit their being retained afterwards. Moreover, by that time more space is being required for the free-blooming Teas and Noisettes; these in their turn being followed by the Roses in sheltered spots in the open, whose flowers are of better quality than late blooms from pot-plants would be.

The plants already established in pots in the open ground ready for potting may now be taken in hand, and with as little delay as may be. The established plants should be removed to a cold pit or frame for a short time, as exposure to heavy rain or frost is better avoided, and the slight protection afforded will soon be needed if the wood is to be retained in a suitable condition for early forcing, the plant not responding in a satisfactory manner after it has been exposed to frost. The holes in the bottom of the pots should be cleared of soil, worm-casts, &c., and if this cannot be done, the plants should be turned out, and the crocks put in proper order, returning the ball without further disturbance, beyond taking off the surface soil. This should be replaced with sound loam, made firm with a rammer, afterwards affording a rich mulch or a sprinkle of some artificial manure or Peruvian guano, decayed dovecote dung,

or blood-manure, over which a little fresh be spread to give the plants a neat appearance.

A few of the best matured plants may at the same time, doing this a little closer than you would for the same variety if in the open border. The strongest growers require too much space for pot-work to gardeners, as they must have the whole of the wood left almost intact to obtain plenty. Rather than these I would recommend Jacqueminot, Fisher Holmes, A. K. Willtave Piganeau, and Captain Hayward for pots. Nor would I grow even these except beautiful colours, avoiding such as Gabriel Magna Charta, Baroness Rothschild, &c. much the same light shade, in better form more fragrance in the Teas, and which will treble the quantity of bloom.

So long as H.P.'s are grown on steadily early stages, they are no more difficult to the majority of other hardy-flowering shrubs the unnaturally hasty excitement of top-growth does so much harm to this section of Roses.

After pruning, stand the plants in the pot for a month or longer, keeping them close; eyes are prominent, when they may be removed to the greenhouse having a temperature of 50° to 55° should be maintained until they are fit to grow, when a rise of from 5° to 10° to the state of the weather, will be beneficial at this point a liberal use of weak liquid-manure assist the plants. From the very first appearance be kept severely in check, and an occasional water upon bright mornings will maintain atmosphere in the house. The water for purposes should contain a small quantity of tobacco-juice. When drops of moisture on the edges of the leaves in the morning, that the conditions are right, but these do not remain too long. As the season advances well to dump down early in the morning induce a rather moist atmosphere, and obtained from liquid manures, the ammonia therein maintains the foliage in health.

When starting a batch of Roses for choice plants that have been worked low roots of stocks, and which have a bushy habit should be lifted very carefully, so that the roots are lost. In potting, strong turfy loam be used, but failing that, leaf-soil, loam, and vegetable refuse and manure, with a little sand, will do almost as well if it be not too careful to pot firmly. Let the collar of the plant be buried an inch or so, and use comparative pots, but do not unduly cramp the root future potting, a richer compost may be used, plunge the pots in a frame or pit, and as the wood is sprinkled sufficiently to prevent the plants with the plumpest shoots may in February or March, but it is better if the plants are grown on steadily the first summer, and for the ensuing winter. As a general rule, turned from the flower-house into the cold frame suddenly when flowering is over, but it is a gradual hardening should take place before done. *A. P.*

VICTORIA REGIA.

FOR a long time after its introduction, but one form of this noble Water Lily. However, different varieties have made their appearance, and one of these we figure in our present issue. It has been flowering freely all the season and is remarkable for the deep, straight, not to the leaves, whilst the deeply-coloured flowers are much less spiny than in the ordinary variety. I presume it is the variety *Randi* of our friends, and it is figured, with others, in Tricker's *Water Garden*, a book we hope to notice in these columns. Some of the plants, will bear a lower temperature than others. Our illustration (fig. 81) is from a photograph by Mr. Gregory, in the Royal Gardens, Kew.

"NITRAGIN."

THE extent to which even the larger animals are dependent on insignificant creatures that can only be distinguished under the high powers of the microscope is hard to realise. The longer we live the more we find out that many of these tiny organisms, far from being the harmful parasites they were once thought to be, are absolutely essential to the lives of their hosts. In our own blood are numerous small animals, called white corpuscles, that resemble in everything but size the animals known as *Amœbæ* that live in pond-water. These white corpuscles, except that they cannot get out of our blood or live anywhere else, are as independent as we are. In diseases the destructive bacteria do not seem to be able to work alone in many cases, but require the assistance of other bacteria to prepare the ground for them, as it were. One of the most remarkable

that leguminous plants (Peas, Beans, &c.), had the power of making use of the free nitrogen of the air, and that the nodules on the rootlets were the channels through which the nitrogen was secured. Further investigation brought to light a very complicated and interesting state of affairs in these rootlets. In a thimbleful of soil there are many millions of tiny organisms, with which the root-hairs of the plant come into close contact. These organisms—or, rather, some of them—invade the substance of the root-hairs, and stimulate the tissues to form overgrown cells, which make up the nodules we have spoken of above. As fast as the cells are formed, they are occupied by quantities of organisms, which do not injure the cells, but seem to stimulate them to intense action. The result of all this is that, in a manner we do not yet understand, nitrogen is absorbed from the air in considerable amount. When the plant finds in the soil sufficient nitrogenous food

is similar, but all three arms are branched at the ends. The form peculiar to Broom is that of a well-formed comma, that of Gorse resembles a badly-formed comma, and the organism of Lucerne reminds us of a note of exclamation.

Our German friends, with their usual energy and acuteness in matters scientific, have actually begun to cultivate these organisms, and the great chemical firm of Meister, Lucius & Brünig are offering them for sale commercially. They have chosen for them the unfortunate name of "nitragin," which is certain to be confused with "nitrogen" in this country. In Germany it does not matter, as their name for nitrogen is "stickstoff." Varieties suitable for the common Pea and Field-Pea; for Vetches and Horse-Beans; for white, yellow, and blue Lupines; for red, white, and crimson Clover, Alsyke, Trefoil, Cow-grass, and Lucerne; for Sainfoin, and many others, are there cultivated.

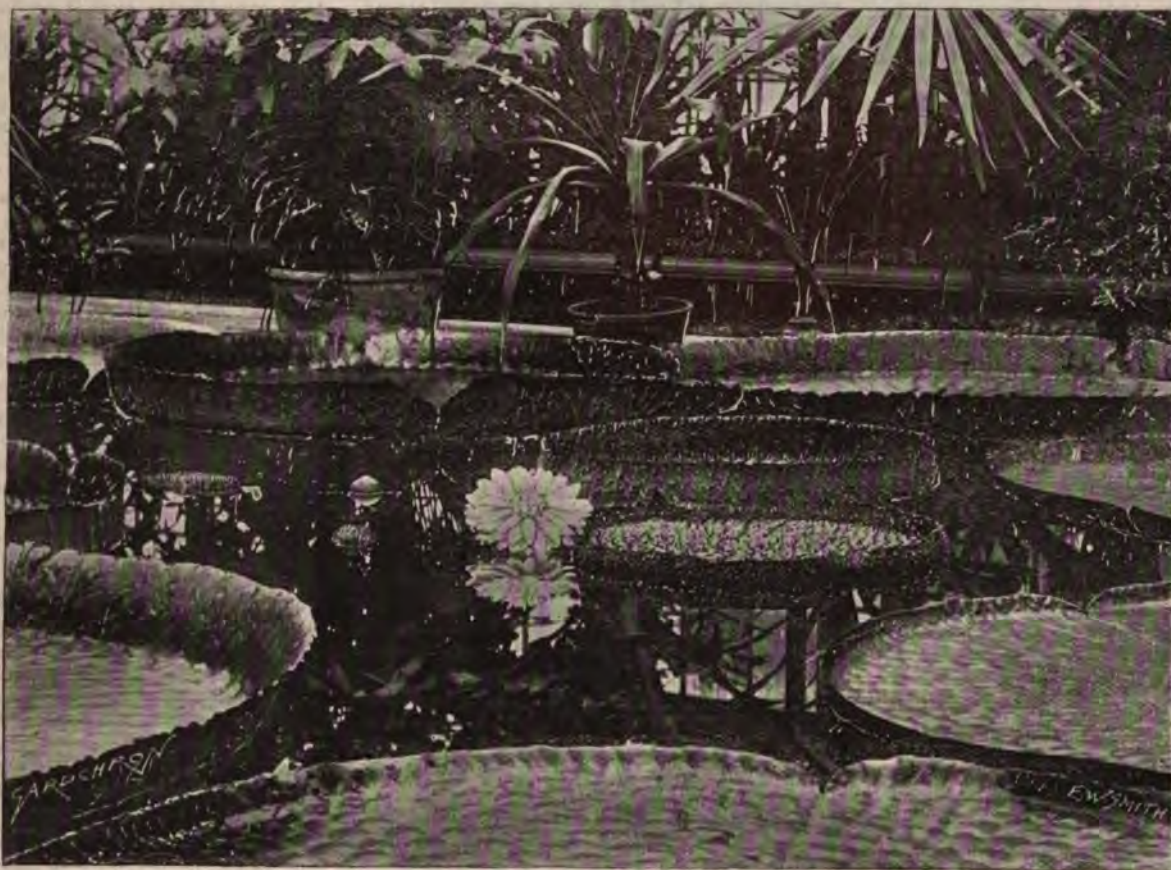


FIG. 81.—NEW VICTORIA REGIA IN WATER-LILY HOUSE, KEW. (SEE P. 264.)

instances of this mutual dependence between higher and lower orders of beings lies in the vegetable world, and is concerned with the way certain families of plants obtain a portion of their food. The existence of the organisms that play a part in this particular co-operative arrangement is perhaps the most important discovery that has been made for many years, and should be of immense interest to agriculturists and others—all others.

For a long time botanists have been puzzled by the outgrowths or nodules that occur on the rootlets of plants belonging to the Bean and Pea family. Another curious thing about these plants is that to grow a crop of Peas, Beans, or Tares, is as good for the land as a strong dose of manure, and many farmers, especially on the Continent, have adopted the routine of growing such a crop previous to sowing the land with Wheat or other grain. The benefit obtained by doing so was obvious, although the reason was not known. Within the last few years it has been found

(nitrates, ammonium sulphate, or farmyard manure) to supply its needs, the nodules, although they are still formed, do not take nitrogen from the air, so that the organisms must have some other business besides supplying the plant with nitrogen.

By cultivation in gelatine and selection, it has been found possible to isolate the particular organisms that take part in this curious root-growth. It is found that each plant has its own organism, and in the interesting lecture of Dr. J. A. Voelcker, at the Society of Chemical Industry, a short while since, illustrations and micro-photographs of these organisms were shown. Red and white Clover and other trifoliums patronise eight different forms, although it is possible that these only represent different stages in the growth of the same organism, the final shape being a three-pointed star. The form peculiar to the Broad Bean is very similar to the last, but two of the arms are branched again. The Vetch prefers a smaller organism than the two preceding; the shape

A large number of experiments were carried out with these materials in England last year, and Dr. Voelcker gives an interesting summary of the results in his paper. Unfortunately the season was so abnormally dry that the experiments were not very conclusive, but the results on the whole were favourable. On the land of Mr. Howard Ryland, Green Peas, Broad Beans, and Sweet Peas (especially the last), benefited by the inoculation; French Beans were doubtful. At Messrs. Sutton & Sons' nearly the whole of the experiments gave favourable indications, especially as regards root-growth. Wheat is being grown this year at Messrs. the ground used for these experiments interesting to see what improvements effected.

By the light of present experiments to take the following inoculating material inoculated before

inoculated, and the organisms sown with the seed. This is important, as the nodules are formed in the early stages of the growth of the plant. As the inoculation only assists the plant to obtain the nitrogenous portion of its food, other manures, such as phosphates and potash, must be supplied, just as in the ordinary way. Where a particular crop—say of Beans—is doing well, it is foolish to expect to improve matters still more by introducing the new material, as it is quite clear that the soil is already inoculated. Further and more elaborate experiments with “nitragin” are being conducted this year, and we hope they will lead to definite rules of conduct being laid down.

One of the most hopeful applications of the new inoculating material is in connection with “Clover sickness.” It is found in practice that Clover can only be grown for a comparatively short time on a particular piece of land; the soil then becomes “Clover-sick,” and about eight years must elapse before the field can be sown again with Clover successfully. The reason for this is unknown, but it may be due to the exhaustion of the organisms that live on the roots, without which the plant cannot thrive. If this be the case, the application of fresh inoculating material will enable the farmer to grow Clover every year, if he desires it, off the same plot.

The knowledge of these organisms throws a light on the fact that, as every gardener knows, manure alone, however well-proportioned, is not sufficient for the satisfactory growth of most plants; it is necessary to have a large quantity of decayed vegetable-matter present as well. An old garden that has been well looked after produces far better crops than one newly planted, the difference being due in all probability to the quantity of these useful organisms present in the old vegetable soil.

Important as the discovery of root-organisms may, and probably will, be to agriculture, the application seems small compared to the immense possibilities that are opened up in the region of chemical industry. On the one hand, we have this inert nitrogen of the air, that can only be made to combine with other elements under the stress of the greatest force at the command of chemistry and physics, viz., the electric arc; on the other hand, these tiny organisms are making nitrogen enter into combination at the ordinary temperature of the soil. When the secret of these organisms has been mastered, we shall have drawn much closer to the boundary that separates gods and men. *C. F. Townsend, F.C.S., in “Knowledge,” September 1, 1897.*

THE HERBACEOUS BORDER.

TRITOMA SULPHURATA.

On visiting Mr. Prichard's nursery at Christchurch the other day I noticed, amongst other fine things, the new yellow *Tritoma sulphurata*. The colour of the flower is a pleasing sulphur-yellow; the flower-stems are from 1½ to 2 feet high, and for the size of the plants they are freely produced. It struck one as being pretty, and very suitable as a margin to some of the taller-growing *Tritomas*. *J. Baxter.*

AMERICAN NOTES.

AMERICAN POMOLOGICAL SOCIETY.

THIS old and dignified Association held its twenty-fifth session at Columbus, Ohio, September 1 and 2. The attendance was not very large, but a good programme was carried out, and those present generally enjoyed the meeting. Subjects which received special consideration were the importations of foreign varieties of fruits, the San José scale, spraying, and new fruits. The old and honoured President of the Society, Mr. Prosper J. Berckmans of Georgia, declined re-election. He had held the office for ten years, during which time he had gained a wide reputation as a wise student of horticulture, and is

an enterprising nurseryman. His successor, Mr. C. L. Watrows of Des Moines, Iowa, is also a nurseryman of repute, and a pomologist of ability. The old and respected secretary, Mr. George C. Brackett, was succeeded by Mr. William A. Taylor of the National Department of Agriculture. It is safe to prophecy that this selection will prove eminently agreeable to a wide circle of American pomologists. Mr. Taylor's very marked accomplishments in pomology, and his exceptionally wide acquaintance with professional and amateur fruit-growers in America and Europe, give great promise for his usefulness in the secretaryship of the American Pomological Society. We may hope, reasonably perhaps, that the Society may hereupon achieve a stronger hold on American horticulturists; for while it has been in no sense a closed corporation, and while its leading men have always sought the public good, the Society has for some reason not very apparent failed to attract a large and representative membership. It has thus not exercised the widest possible influence, and its acts have not had quite the cogency which might be desired. America, without question, ought to have a strong representative and authoritative pomological society, and there is no insuperable reason why the present organisation may not develop into a fairly satisfactory fulfilment of the ideal.

JAPANESE PLUMS.

A very marked interest has been taken in the Japanese Plums from their first introduction into America. This interest has not at all been confined to amateurs and experimenters, but market growers have planted extensively of almost all the earlier varieties. We are just now now beginning to be able to measure the value of these Plums by the market standards. Most of the varieties make good, healthy, strong-growing trees, and bear at a satisfactorily early age. The fruit of some varieties is large, fine-looking, and of good quality. They are mostly very prolific, and the fruit ships well. Some varieties are desirable on account of extreme earliness. Most of them unfortunately are cling-stones. Abundance is most widely known; but Burbank, in spite of a very ill-shaped tree, is the commonest favourite for size and quality of fruit. The nomenclature of the Japanese Plums is sadly confused, notwithstanding their very recent introduction and the earnest efforts of Bailey, Taylor, Price and others, to extricate the leading varieties. *P. A. Waugh.*

FOREIGN CORRESPONDENCE.

ABERIA CAFFRA.

THE Kei-apple of South Africa has ripened fruit this month in the garden of Mr. C. H. Shinn, at Niles, Alameda, co. California. Mr. Shinn reports that abundance of fruit “set,” but that only about eight or ten near the centre of the bush came to maturity. As far as I am aware, this is the first time this shrub has ripened fruit in California. No seeds were found in the fruits. *J. Burt Davy, Berkeley, California, September 16.*

ALDENHAM HOUSE, ELSTREE.

THE great feature in Lord Aldenham's extensive and beautiful gardens is the ornamental water which runs through the greater part of them, sometimes as a narrow rivulet, with neat grassy banks or rocky edge, here and there broadening into a greater expanse, which in the new water-garden, formed on the site of the moat of the old hall, is of considerable extent, and everywhere beautified by the skilful manner in which Mr. Beckett, the gardener, has arranged the clumps of flowering and foliage shrubs, the masses of showy, hardy perennials; and in the water, the Water Lilies and other water plants. Even the stone bridges which span the ornamental water are made to contribute their share of flowers by the interstices in the stones, and

the sides of the rocky basements being planted with Saxifragas, Sedums, and other close-growing alpine plants, among which the clumps of *Gentiana* have been giving a fine show of rich dark blue flowers, and other dwarf-growing species usually seen but small tufts, have here grown into masses 3 or 4 feet across, and flowered profusely. Glancing along the banks, the effect of the skilful use of coloured foliage shrubs is very evident at this season, when their colours are more noticeable even than in the summer, when bright-coloured flowers are more plentiful. Of the coloured-leaved shrubs, the golden-leaved *Poplar*, which is here cut back every year, is very bright and effective; very telling, too, are the clumps of *Golden Privet*, which are also restricted in growth according to the position it occupies. The *Copper Beech* is made to assume a pyramid or bush-form, and its dark tints are very effective; so also the *Prunus Pissardi*, *Golden Yews*, clumps of variegated *Cornus*, and great number of other coloured foliage. But in every instance where one of these is used, sufficient of it is planted together to give the desired effect, and the same object does not occur beyond the scope allowed to it until another view is opened up. This plan of planting in masses of one thing, with an edging of dwarf *Privet*, *Hypericum*, *Vinca*, or similar plant, is adhered to throughout, and mixed shrub-beries are avoided as much as possible. By this means the feeling that any portion of the outdoor garden is a sample of the whole, which prevails in a garden where mixed planting is the rule, is done away with, and some beautiful and striking effect secured, which last in the mind. As, for example, the great masses of white and red-flowered *Rosa rugosa* at Aldenham, whose waning flowers are mingled with a profusion of orange and scarlet fruit, the great beds of *Hydrangea paniculata*, and large masses of other showy things, which are calculated to leave an impression on the beholder not possible were the plants set out in mixed beds.

Of berried plants, *Crataegus pyracantha* is the most brilliant, a good portion of the mansion on one side being covered with its branches, closely set with scarlet berries. In the grounds, and along the banks of the stream, too, this plant is grown in dwarf pyramids, also covered with berries, and so used it is one of the best and brightest things of its kind. The different species of *Crataegus* are also bright with coloured fruits; and among the *Cotoneasters*, *C. Roylei* as standards bearing pendulous branches of round leaves and purple berries, are pretty and uncommon objects. Along the banks of the stream, and in other parts of the garden, there is still a good show of flowers, both annual and perennial. The glowing yellow of the *Sunflowers*, the bright and varied colours of the *Dahlias*, *Gladioli*, and other tall growers rise behind the rich orange clumps of *Montbretias*; the crimson, white, and purple of the *Pentstemons*; the tall spikes of scarlet *Lobelia cardinalis* *Queen Victoria*, which in one place is mingled effectively with the blue *Salvia patens*; the bright mauve tints of the *Asters* of the *Michaelmas Daisy* class, of which there is a very great number of varieties, one great bed containing some hundreds of plants, soon to be masses of purple, mauve and white flowers; bushes of *Fuchsia Riccartonii*, trained pyramids of *Eccremocarpus scaber*, which like *Mina lobata* and *Maurandya Barclayana*, makes very effective specimens when so managed. Around the mansion, the oblong carpet-beds, alternating with circular beds of *Fuchsias*, are still bright and trimly kept. In the bedding-plant arrangement the tuberous *Begonias* certainly have the advantage, for they are covered with rich crimson flowers; and the large bank of sub-tropical plants seems even more massive than formerly, probably on account of many of the plants having attained such vigour before being planted out. For a view of the flower-garden see *Gardeners' Chronicle*, March 7, 1897, p. 297.

In the wild garden, the walks of which are made as for gravel paths, but turfed over so as to be clean in all weathers, are many subjects which have assumed unusual beauty, by being allowed to grow unrestricted. Of these, very striking are the large patches of double-flowered *Bramble*, now covered with

clusters of small rose-like blooms; the cut-leaved Brambles, handsome both in leaf and fruit; the Hydrangeas, Heaths, Climbing Roses, of which the Crimson Rambler is the favourite; and numbers of other things capable of taking care of themselves, and mingling effectively with the bracken and tall grasses growing beneath the stately Oaks and other large trees, which so greatly beautify this large and beautiful estate.

THE GLASS-HOUSES

are devoted principally to the growth of fruit, and flowers for cutting, and plants for decoration. The long ranges of vineries and Peach-houses have heavily cropped this season, the quality of the fruits being of the usual excellence for which Mr. Beckett is noted, and of which beholders of his prize-winning exhibits at the large shows has, as in former years, had evidence. The Crotons and Dracenas have very brightly-coloured foliage; the Calanthes, Cologynas, and Cyrtopodiums promise well for bloom; and the immense number of Chrysanthemums, for which Aldenham is noted, are in splendid condition.

The kitchen garden, with its cross-walks of showy herbaceous perennials, is as neat and well-kept as every other part of the garden, and good results in everything have been obtained, though it is said with more than usual labour on account of the peculiar season, which has also caused the crops of out-door fruits to be very far below the average; Plums, of the larger fruits, being the best. *J. O'B.*

THE COPPER TREATMENT OF THE POTATO DISEASE BY THE BORDEAUX MIXTURE.

THE *Gardeners' Chronicle* was the first journal in which this method of preventing the ravages of the Potato disease was explained to the English-speaking world; many and frequent are the allusions which have since been made to it in these columns. At first, because the Mixture was not properly made it was opposed on the ground of injury to the Potato foliage; but it was soon found that with a little more time and a little more care, no injury was done to the plant. That the method has not been more widely adopted is simply because we have for a series of years been exempt from the disease to a greater or less degree. This year, however, we are hit, and our neighbours across the Channel even more so, and the matter of course assumes a political phase. In one of our leading daily papers, an article appeared recently headed, "Is it famine?" in which a pitiful account was given by an eye witness of the state of the Potato crop. He says, moreover, "the only Potatoes good for anything are those which were 'sprayed' twice." This shows clearly enough what an eye witness thinks of spraying. But the writer goes on to show that it is practically useless to the very small grower on account of the expense—mainly the cost of hire, for purchase is out of the question—of proper spraying machines by the very small and very poor growers. We do not doubt that the inhabitants of Ireland are poor, but we venture to think that where there is a will there is a way. From France the Bordeaux Mixture came; and from France, it seems, we must learn that poverty is no bar to its successful use. A visit to Paris and neighbourhood soon showed us that sacksful of sulphate of copper were disposed for sale in the county towns—so that there must be some demand for it. We find, as we expected, that the French peasant does not mean to lose his crop if he can help it. He often unites with his neighbours, and forms a syndicate in a small way for the purchase of a spraying-machine. But if he is too small a grower, and too poor even for this, does he stand still with his hands in his pockets lamenting over the loss of his Potatoes? Not a bit. He takes a bundle of Heather or Ling, makes it into a little broom, and slings the remedy by hand over his patch of Potatoes. Are the Potato plots in Ireland too small for this?—is Heather too expensive?—or can it be possible that it is too much trouble? *William B. Plowright, M.D., King's Lynn.*

STOCKHOLM.

THE AUTUMNAL FRUIT SHOW.

ABOUT the same time as you held your great show of British-grown fruit, Scandinavian gardeners and nurserymen also exhibited their products at a show here in Stockholm. It lasted from September 23 to 30, and was the most successful show of the kind ever held in this country. The four northern countries, Sweden, Denmark, Norway, and Finland were all represented. For plant-growing, of course, Denmark is climatically the best favoured, and Danish nurserymen are more experienced exhibitors, and it must be admitted that their display was the best in quality and arrangement. Two Norwegian nurserymen also showed some excellently-grown plants. But the Swedish growers seemed to compete very well, and would have done better if the arrangement had been better carried out. Ferns, Palms, Dracenas, Pandanus, Crotons, Ficus, Philodendrons, Asparagus, Myrsiphyllum, and other decorative plants were well represented. Some early Chrysanthemums and some good collections of Cactus Dahlias were also shown.

As to decorative flower arrangements, there were some capital exhibits, and the firm, R. Billström, Stockholm, made really a grand show. There were Orchids, different coloured Nymphs, and many other rare flowers in this country in great profusion and excellently arranged.

In the vegetable department some Norwegian nurserymen made the best show of Cucumbers and Melons; and from the north of Sweden were shown some really high-class vegetables. Globe Artichokes could not be seen better than at this show. Tomatoes are beginning to come into fashion in this country, to judge by the numerous exhibits of this fruit. Finland made a good show of vegetables. Several exhibits came from far north of the polar circle!

The fruit-show was really grand, and was, as far as Sweden is concerned, the chief part of the show. As to the mode of arrangement, there were collective shows from the different counties, and separate shows from many great fruit-growers. In many of the counties shows had been previously held for the purpose of selecting the exhibits. It was astonishing, even to many in this country, to find what a great variety of good fruits can be grown so far north. Some exhibitors from the southern counties, I think, could have competed favourably anywhere. Of course, many of the finest foreign varieties of Apples and Pears cannot, to any extent, be grown in this country; but some of our natural varieties are of a high-class quality. It is easy to understand that, for those kinds of fruit that can stand our hard winters, and do not want too long a time for their development, our fine summers, with their long days and bright nights, are highly favourable for giving high colour and good flavour.

As regards the development of fruit-growing in this country, it is going in the same direction as in other countries. A great number of varieties are tried, but growers are gradually fixing upon a small number for cultivation on a large scale. Dwarf-growing trees are more and more taking the place of tall-growing standards, because they are easier to protect, and the fruit is of a higher quality. What is sorely wanted here, as in many other places, is a better system of sorting, packing, and marketing the fruit. *A. H. M., 31, St. Nygatan, Stockholm, Oct. 3, 1897.*

FORESTRY.

TYPES OF BRITISH WOODLAND.

AN easy and usually effective method of altering the character of a wood on flat ground is that of leaving patches of bad or boggy ground unplanted, and allowing them to grow whatever may chance to take root on them. Such patches let light and air into the wood, and the trees round their margins are well clothed with branches, and may, if desired, be broken up into groups, or single trees may be isolated

to relieve the general appearance of the outline. Such patches as these are of great value to the sportsman, as they furnish plenty of grass and low growth for game cover, and being warm and sunny, both ground and feathered game make them favourite resorts. Another means of affording variety is by introducing patches of underwood here and there throughout the wood, either in the shape of ordinary coppice, or by planting low-growing or shrubby species in place of the ordinary timber-trees. Patches of Gorse, Broom, or even Heather all help to enliven and change the scene where necessary, and allow what ground is really under timber to be treated independently of game or ornament.

Another feature of mixed or woods of any kind consists in the general appearance presented from the rides which intersect them, and the manner in which these latter are laid out. Rides are ostensibly formed to facilitate the removal of timber, and to allow sportsmen and others to penetrate into all parts of the wood without difficulty. But when judiciously planned, they also enable the most picturesque parts of a wood to be seen without leaving the beaten track. Their course is often determined by the conformation of the surface, and in such cases little pains need be taken beyond those necessary to ensure a suitable gradient for the hills, and the avoidance of difficult obstacles. On flat ground the question is rather how to give them a certain amount of intricacy without taking unnecessary curves and turns.

The usual course is to run a ride round the margin of the wood at a short distance from the boundary line, and into which those from the interior run. This idea is a very good one, but is sometimes spoiled by following too faithfully the exact line of the boundary at too regular and short a distance from it. When so formed, the exterior of the wood becomes visible as the trees get thin below, and the view from the ride is neither one thing nor the other. It is better to allow it to run right up to the margin in one place, and recede well back from it in another. By this means the scene is occasionally enlivened by the more extensive view presented to the eye, and at the same time the idea of unbounded extent is more effectually imparted than in the former case. The axiom sometimes heard, that "Nature abhors a straight line," applies with more truth to woodland rides than to roads in general. For convenience when shooting, it is not uncommon to find rides laid out perfectly straight for a considerable distance, and one or two of this kind in a large road may not be altogether out of place. But in a general way, the idea a woodland ride should convey is that of it having been cut or made through the trees, and not that the ride was first formed and the trees planted afterwards. A straight ride never conveys the former of these ideas, unless it is narrow enough to pass between trees 2 or 3 feet apart; but if made with a light curve at one or two points where a clump of trees in close order, or a single tree of large size, are to be found, the result is much more natural and pleasing. The width of the ride is not without importance also. When wider than 10 or 12 feet, it fails to lend itself to the idea of being a roadway through the plantation, and becomes a sort of attenuated clearing not wide enough to call a glade, and too broad to be styled a track. When breadth is necessary in a ride for sporting purposes, a condition only really necessary in young plantations, it should be attained at a few places only, and the trees allowed to stand close up to the used track as much as possible.

The density of young plantations, which often renders them so monotonous at first, is never relieved by widening the rides running through them, as many seem to think. It is rather effected by making short openings a few yards into the wood, which terminate in small partial or total clearings, the margins of which are visible from the ride. By such means, the effect of sunlight falling on or through the foliage, when the observer himself is in shade, can be best seen and appreciated. As the trees get older and thin at the bottom, the

beneath becomes more extensive; and these occasional openings, by retaining some of those features common to partially-isolated trees, are still useful in giving variety to the wood. *A. C. Forbes.*

(To be continued.)

BOOK NOTICE.

THE PRINCIPLES OF FRUIT-GROWING. L. H. Bailey.

THIS is one of the best of modern books on the cultivation of fruits which has come under my notice, and possibly somewhat too technical for those who have a distaste for elaborate columns of figures and statistics. The book, however, contains an immense fund of sound, useful information, which ought to be read and put into practice by every aspiring cultivator of fruits in this country. It betokens throughout an honest endeavour to unite the teachings of science with knowledge gained by long years of experience. If one would read it unbiased and unprejudiced, matters of much importance may be discovered between the lines that relate to the success of the orchardists on the other side of the Atlantic. This should at the least be worth some amount of consideration, for it is clear to everybody that our home fruit-growers are being beaten in our own markets with fruits which we are quite competent to produce "if" we could only learn better methods of cultivating, &c. This has been demonstrated over and over again. The fact is, our fruit farmers have much to unlearn—an unpleasant fact; but the author explains to us how this has likewise to be done in America, for he says, "Very many of our best fruit-farmers are men who were not brought up entirely on the farm, but who had received a sound business training elsewhere. They come into the business with trained minds, skilled judgment, and especially without too much stereotyped knowledge, and therefore without prejudice. They are willing to learn, and they quickly assimilate new ideas. It sometimes seems as if the fruit-farmers of the future are to come largely from other occupations, where men are free from the bonds of tradition."

Separate chapters are devoted to such subjects as soils, situations, aspects, wind-breaks, shelter, frost, drainage, climate and others, all of which are ably dealt with. Insect-pests also receive full attention. Information of great interest is fully supplied upon a subject little thought of by the ordinary grower, viz., the evaporation that goes on from the twigs during dry frosts, when the sap supply is stopped through the action of frost; hence the shrivelled appearance of the bark, especially in newly-planted trees.

The benefits and injuries due to mulching also receive explanation. On the other hand, it is new to us Britishers to be told that "A thorough spraying of plants at nightfall, when a frost is feared, is one of the most efficient means of protection from light frosts." . . . "An abundance of watery-vapour in the air probably tends to check the radiation of the earth's heat, and the evaporation of water has a pronounced influence in raising the dew point."

Rightly or wrongly, it is the custom of the ordinary English gardener to prevent his wall-trees from getting wet by rain or sleet showers during this critical period.

The kindling of fire-smoulders in the orchards, to cause a dense smoke, is also recommended as a frost-protector, for the author says, "Every quart of water thus evaporated, and again condensed in the surrounding air, would be sufficient to raise the temperature 10° throughout a space 80 feet square and deep."

We do not agree with the author's statement in regard to the tillage of young orchards, for he says—"In young orchards it is commonly best to 'plow' rather deep, say 6 or 8 inches, in order to send the roots down," seeing that it is always our greatest endeavour to keep the roots of bushes, wall-trees, &c., as near the surface as possible. We are reminded

that trees may be made to grow too much wood, and therefore too little fruit certainly, but this 6 or 8-inch ploughing assuredly aggravates the evil. This applies more particularly to the States, where extremes of heat and cold are greater than here.

Plant-foods furnish some astonishing statistics, for it is stated that, in round numbers, 5 bushels of Apples, with the leaves of a tree large enough to produce that quantity of Apples, assimilate 21 lb. nitrogen, 3 lb. phosphoric acid, and 26 lb. potash, from the soil; but it should in justice be stated that the author shows how much of the above fertilisers are restored to the earth by good tillage and cultivation.

He also affirms "that of these means of determining the fertility of the land, one method determines the physical constitution, and the other the mechanical or physical condition; chemistry determines the amount and kind of plant-food in the soil but it cannot tell just how useful this food may be to the plant. This depends upon the physical condition of the land, or upon the relation of the soil to warmth, moisture, air and mechanical constitution. The only infallible guide to the proper treatment of the soil is experience, not mere science or speculation; but science explains the laws and directs the application of them when once experience has discovered them. Fruit farming cannot be done by recipe."

Some excellent advice is given in the matter of selecting young trees, and the author goes on to say:—"The nurseryman contends that he grows the varieties which the planter wants, those for which there is a demand. As a matter of fact, he largely forces the demand by magnifying the value of those varieties which are good growers in the nursery. The nurseryman's business ends with the growing of the young tree, and the tree which makes the straightest, most rapid, and cleanest growth, is the one which finds the readiest sale. Now it by no means follows that the variety which is the cheapest and best for the nurseryman to grow is the best for the fruit-grower, the fact being often overlooked that fruit trees are just as distinct and different in habit of growth as they are in kind of fruit." It being plainly demonstrated that a thorough knowledge of these matters, and the putting of the same into operation, is quite as essential and important as pruning, planting, &c.

Information on grading, packing and marketing is also given in detail, and of a concise and practical character, which every home fruit-grower may profit by.

The price of the work is 5s., a very moderate charge for so much useful information, and which we can conscientiously recommend. *W. C., The Macmillan Co. New York; and Macmillan & Co. Limited, London.*

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Laying Late Broccoli.—Late Broccoli growing in the rich soil of a kitchen garden have made a rank soft growth, and they are sure to succumb if the frosts are severe. To ensure greater safety to the crop, the plants should be heeled-in with their heads towards the north. There are gardeners who will not take this precaution, believing it to be useless; and in the warmer southern and western maritime counties it may not be necessary, but a short experience of a locality will soon determine what course he should take. My experience at nearly 600 feet above the sea-level is that Broccoli cannot withstand the frosts of an ordinary winter, although it is a southern maritime county. Heeling-in is a simple job, taking but little time to perform, but that it pays for the doing I have repeatedly proved. For the benefit of those who may not have heeled-in any Broccoli, I will briefly describe the process. Supposing the rows to run N. by S., take out a spadeful of soil on the north side of the first plant, of course starting at the N. end of a row or plantation, then putting the spade a good distance under the plant tilt it over backwards till it is laid nearly flat, and take a spadeful

of soil from behind the next plant and place over the stem of the one first laid, and so on with every one in a row. The plants may flag slightly for a day or two if the weather be dry, but this is an advantage rather than otherwise; and it will not, if the operation has been carefully performed, affect the well-being of the plants.

Early Varieties of Broccoli and Late Ones of Cauliflower.—The beds of these plants should be examined once or twice a week, and the leaves broken down over curds as a means of protection against the light, frost, and rain. The largest heads may be stored roots and all, in a cool shed where they will keep fresh for a week or longer time. Frigi domo, or thick cotton shading, may also be used to ward off frost for the few nights that autumnal frosts last.

Lifting and Storing Roots.—Beetroot and Carrots are among the first roots to lift and put into store, and the first-named is more tender than the second. The roots keep well in a cool, well-ventilated cellar or thatched shed, and the cooler the better. Lift the roots without breaking the tap-root, and having done that, seize the leaves in a bunch, and twist them off above the crown, and then pack the roots together in damp sand or soil, the crowns pointing to the outside, and, if possible, to the light. If for lack of accommodation Beetroot have to be stacked, plant in a border thickly in a sheltered border, the open, the crowns must be protected by bracken or litter, in the case of a stack, by thatching it. Carrots may be stored in the same way, but in the case of these roots, the tops should be cut close to the crown, and the roots like Potatoes, enough being reserved for a few weeks' supply, as it might not be convenient to open the store-pits during severe frost or heavy snowfall. Parsnips have the best flavour and quality when left in the ground and taken up as required, affording the ground a covering of litter to keep out frost.

Salsify and Scorzonera may be lifted and stored in the same manner as Beetroot, cutting off the tops, but not breaking the smaller roots. Only the best roots of any kind should be stored; malformed and those with divided roots being reserved for present use, or given to the pigs or cows if the crops are sufficiently good.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Cucumber Plants.—The winter-fruited plants should be making bine rapidly, if they were planted about the beginning of last month; and later plantings will be making satisfactory progress during the present genial weather. Let the bine be thinned out somewhat, the laterals pinched at regular intervals of time, never taking away much growth at one operation, and endeavour to get the trellises well covered with sturdy foliage. If aphides, red-spider, or mildew appear, lose no time in applying a remedy, as, for example, Richards' XL All vaporizer for the insects, and flowers-of-sulphur for the mildew. As a preventive of the last pest, paint the hot-water pipes with lime-wash containing sulphur. Afford the hills slight dressings of fibrous loam as frequently as the roots show at the surface, keeping the latter friable and crumbly, and while not making the soil very moist, see that the plants do not lack water at the root, or red-spider will soon show itself. Old Cucumber plants that are still useful should have the fruits removed from the laterals for a time, so as to allow the plants to recover their vigour, future cropping being regulated with judgment, and not more than one fruit allowed to a joint, and these distributed all over the trellis. Only tepid water should be afforded Cucumber plants, and an occasional syringing at closing time on fine days will still be of benefit to them. Admit air on all favourable occasions.

Melons.—Plants with ripening and growing fruits should have useless lateral growths pinched out, and the temperature of the bed and of the air will be maintained, closing early in the afternoon, and covering the house at night. Water will be but sparingly required by plants with fruits nearly developed, and not any by those approaching the ripe state. All fruits that show signs of being almost ripe should be removed from the plants and stored in a dry place. They will keep sound for a week.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

American Plants.—Although it may be preferable to plant Rhododendrons, Azaleas, Andromedas, &c., in the spring, there is at that season so much important work to be done, that it is difficult to spare the

requisite labour. In many gardens, therefore, it will be more convenient to plant such subjects in early autumn, and if the work be done during the present month, the plants will succeed well enough. If the natural soil of the place is adapted to the growth of these plants, there need be little labour; but if it be of a heavy, clayey nature, or should it contain much chalk and limestone, the natural soil in the beds or borders should be thrown out to a depth of 2 feet. If necessary, artificial drainage must be provided below this depth, and the bed afterwards made up with peat broken up moderately fine, the rougher parts to be placed in the bottom; or, failing this, rather light fibrous loam and leaf-mould in equal parts, and well mixed together. The soil should be moderately dry when used, and when it has been made firm by treading, it will be in a condition to receive the plants. The plants will need to be put at distances apart according to their size, good, bushy specimens about a yard high generally requiring a similar distance between the plants. Tread the soil firmly round the plants, and give one watering should the weather continue dry. Varieties are so numerous, it is not necessary to give names of *Rhododendrons*, but a few of the early-flowering *Noëleanum* type should be included; and if they are planted somewhat in the shelter of tall deciduous trees, these will afford slight protection to the early flowers.

Roses on Walls and Fences.—If any planting has to be done, preparations should be commenced at once. Roses prefer a moderately heavy and retentive soil; but if the staple be very wet and heavy, it may be necessary to incorporate some rotten manure and wood-ashes, and to provide drainage. The opposite extreme—light sandy soil—however, is worse; and should the staple be of this nature, it must be supplemented by soil of a much heavier nature, and some rotten dung. Roses may be moved at the present time with safety, and if planted early, they will become re-established before severe weather sets in. For clothing open fences or any cold position, even a north aspect, the *Polyantha* Rose, *Turner's Crimson Rambler*, is one of the best varieties, and it also makes an admirable pillar Rose. Other good climbers include *Gloire de Dijon*, which, for colour, continual blooming, and general hardiness, is unrivalled. *Maréchal Niel* should be planted against a south wall; the old *Gloire des Rosomanes*, with semi-double deep crimson flowers, is a strong grower, and continues in bloom into the winter months; *Reve d'Or*, *Climbing Captain Christy*, *Reine Marie Henriette*, *Madame Alfred Carrière*, *W. H. Richardson*, *Cheshunt Hybrid*, and *Climbing Devoniansis* are desirable Roses for planting against walls or fences.

General Work.—Preparations may be made for re-filling the flower-beds when frost has killed the plants they now contain. If small trees of *Retinosporas* and similar subjects are used, any strong growers may be partially lifted with a fork, and the growths cut back if necessary preparatory to their removal to the flower-beds. If gravel walks are infested with weeds, the present fine weather affords a favourable opportunity for applying a weed-killer, which should keep them free for the next six months at least. Being a very strong poison, this should be used with great care, and a special can and tub be kept for using same.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

Miltonias.—Plants of *Miltonia vexillaria* should now be removed from the cool house to the intermediate-house, choosing a position where they will obtain plenty of fresh air and light. Plants that were re-potted in August are now rooting freely, and if the moss on the surface of the soil has failed to grow, the dead pieces should be removed, and fresh heads of living moss carefully pricked in thickly over the surface. *M. Phalenopsis* should also be put in the Cattleya or intermediate-house at this season, also the lovely rose-scented *M. Roezlii*. The two latter species, if necessary, may be re-potted, but do not use pots of too large a size. Both species are deeper-rooting subjects than *M. vexillaria*, therefore they root and grow more freely if a few crocks only be placed over the bottom of the pot, using sphagnum-moss only for the plant to root in, excepting a few small pieces of crock. *M. Phalenopsis* delights in plenty of light, but *M. Roezlii* prefers a little shade. *M. Endressii* also prefers a shady position. The beautiful hybrid, *M. Bleuana*, and its distinct variety *nobilior*, now in full growth, should be placed in the intermediate-house. The late-flowering varieties of *M. vexillaria*, as *rubella*, *splendida*, and the rare *Leopoldi*, require to be very carefully

watered until the roots are again active. All the other varieties mentioned require abundant supplies of water until growth is completed. At this season small yellow thrips are generally troublesome to the young growths of *Miltonias*, and every effort must be made to get rid of them. Other members of the *Miltonia* family, which are quite distinct in appearance from the preceding varieties, as *M. candida*, *M. Russelliana*, *M. spectabilis*, *M. Peetersiana*, and *M. virginialis* are now in bloom, and the plants should be kept rather on the dry side until growth re-commences. The intermediate-house is the proper place for them. The rare and distinct *M. Lubbersiana* should be suspended close to the roof-glass in a shady part of the Cattleya house.

Cattleya-house.—In the last-named division several plants of the pretty *Vanda Kimballiana* are now making a pleasing show. After the spikes have been removed, little water is required at the root, as the terete leaves are liable to become discoloured if much moisture be afforded. Its allied species, *V. Amesiana*, is fast sending up its spikes, and the plant should be well watered until the flowers commence to open. Both species should be grown at the coolest and lightest part of the house. Plants of *Cologynne cristata* and its varieties may be assisted to finish up strongly by affording abundance of root moisture until the bloom-spikes appear. Keep the plants near to the roof-glass, as plenty of light at this period is indispensable. Other *Cologynnes* that are in full growth should be thoroughly watered each time the plants become dry. *Anguloa Ruckeri*, *A. Clowesii*, *A. uniflora*, and *A. eburnea* should now receive all the sunlight possible. When the leaves commence to change colour, the plants will require less water, but sufficient must be given to prevent the pseudo-bulbs from shrivelling.

In the cool-house.—The Brazilian *Oncidium varicosum*, *O. Forbesii*, and *O. crispum* are producing flower-spikes. It is very easy for these plants to over-flower themselves, and they then gradually dwindle away. To avoid this, it is good practice, even with strong, well-rooted plants, to remove the spikes as soon as the flowers are open, and as regards small weakly plants, to pinch out the spikes immediately they appear. *O. concolor* will now require less water at the root; its flowering season is in April and May. The pretty *Stenoglottis fimbriata* appears to delight in plenty of water at the root at all seasons. It should be potted in a mixture of peat and coarse silver-sand, and in a similar manner to an ordinary greenhouse plant.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoe Park, Luton.

The Plant Stove.—The various plants in this house, whether about to rest or those which grow more or less during the coming season, are the better for an examination, and some of them reported or shifted, notably *Codisiums* and *Dracenas*, which it was desired to increase the stock of, and were tongued in the early part of the year with that intent, and have been cultivated in 60's. The pots into which these plants may now be put should be about one size larger. After potting let them be stood in a shady part of the house or in the stove-pit for ten days. *Allamandas* and *Dipladenias* growing in pots should now be placed in the sunniest part of the house, so as to ripen the wood ere they are pruned. *Anthuriums* should be watered with care at this season, and not allowed to become quite dry at the roots, sufficient water being given to keep the sphagnum-moss fresh and green at the surface. *Begonia corallina* is a plant which, when planted out, or grown in tubs, should now be assisted with liquid-manure. It is a handsome species, with long racemes of bright coral-red flowers of considerable length, and the latter are borne in the greatest profusion. The plant looks well when trailing along overhead-wires in the stove. The plant lasts in flower for a long time, and is readily propagated in the spring from cuttings or seed. It does not flower freely when young. The temperature of the stove may be kept at this part of the season at 65° by night, with a rise of 6° to 10° by day, according to the weather; and any syringing of the inmates that may be required should be carried on in the morning hours.

The Greenhouse Cinerarias.—The earliest raised plants are now showing flower, and may be afforded once a week applications of weak, clear soot-water, and fumigated, when the leaves are dry, for the destruction of aphides; in fact, mild fumigation should be done once in ten days whether the insects are observed or not. Grow the plants in a cool-house, and afford them plenty of ventilation, but not so

much as will cause the leaves to flag. Succession-plants will require to be shifted into larger pots; and the next to flower may be placed in the pots in which they will flower. Let these succession plants be kept in a cold-pit or frame, where they will be quite safe if protected with mats, &c., on frosty nights; and where they will have the moist, cool surroundings just suited to their needs. In such places, slugs do a good deal of harm at times, disfiguring the leaves, and these creatures must be trapped with slices of Potato, bran, &c.

Ericas.—These plants may now be placed in the greenhouse or cold pit. *Ericas* must never be allowed to get dry at the root, and when water is afforded, it should suffice to moisten the whole of the ball of soil; and rain water is the best to use. *Correa cardinalis*, and *Boronia*, should be put at the warmer end; *Acacias*, *Aphelexis*, *Pimelias*, *Tetrathecas*, and plants of a similar nature, may also go into the greenhouse. Some of the forwardest of the *Cyclamens* may now be allowed to flower, affording them a night temperature of 50°, and fumigating the house regularly for the killing of white thrips. The flowers of later batches should be removed as soon as they can be got hold of with the finger and thumb. *Cyclamen* flowers, when required for any purpose, should always be pulled, and not out, as, in the latter case, the remaining portion of the stalk decays, and it carries decay to the corm. A sowing of *East Lothian Stocks* should now be made in pans placed in a cold frame, from which frost is excluded, growing the seedlings cool during the winter.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Fruit Picking.—The weather during the present month has so far been favourable to the ingathering of Apples and Pears, and the ripening of the current season's shoots. Therefore, the harvesting of the above-mentioned fruits will be nearing completion in most fruit-growing districts, in which, however, the fruit crops are unfortunately much below the average, though individual fruits, owing to the lightness of the crops borne by the respective trees, are fine in size and good in quality, especially in the case of trees growing in heavy moisture-holding soils. As stated in previous calendars, the fruits should be carefully handled in taking them from the trees, and spreading them on the shelves in the fruit-room, blemished fruits being placed on shelves by themselves for present use.

Fruit-room.—Admit air freely when the external air is dry and as warm as that of the room, so as to admit of the moisture arising from the freshly-gathered fruits being dissipated. The fruits in store should be looked over bi-weekly, and all such as show signs of decay removed before they contaminate the sound fruits. Just now, such Pears as *Beurré d'Amanlis*, *Doyenné Boussoch*, *Pitmaston Duchess* and *Louise Bonne of Jersey* are particularly liable to decay, and should be closely inspected; and later sorts of Pears and Apples in their season.

Destroying Seedling Weeds.—The plantations of Strawberries and Cranberries should be hand-weeded, and where possible the weeds cut down with the Dutch-hoe in all parts of the bush plantations, and those of Raspberries.

Budded Fruit-stocks.—All of the recently-budded stocks of Apples, Pears, Plums, &c., should have the ties which are likely to constrict the bud by cutting into the rind severed in one place so as to afford relief. A little timely forethought exercised in this direction is rewarded by the production of uniformly better and handsomer trees, the point of union between stock and scion being scarcely visible to the non-professional eye, a circumstance which generally results in health and productiveness.

THE NURSERY AND SEED TRADE.—Mr. B. WYNN, 1, Dane's Inn, Strand, has published an alphabetical list of the nurserymen and seedsmen of Great Britain and Ireland, together with their postal and their telegraphic addresses. The plan adopted is simplicity itself, the type bold, and easily read. There are nearly 4000 entries.

PLANT PORTRAITS.

GLADIOLUS COMTE DE KERCHOVE, *Revue de l'Hort. Belge*, October 1, 1897.

PASSIFLORA PRINCEPS (= P. racemosa), *Bull. Soc. Toscani di Orticoltura*, ix., 1897.

RANUNCULUS CARPATICUS, *Garden*, October 2.

RHUS TRACHOCARPA, *Garden and Forest*, September 29.

SMILAX ASPERA, L., *Gartenflora*, October 1, 1893.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	Oct. 18	Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Branch Nurseries, Heathfield, by Protheroe & Morris (two days). Bulbs, Plants, &c., at Stevens' Rooms.
TUESDAY,	Oct. 19	Bulbs, at Protheroe & Morris' Rooms. Lilies and Palm-seeds, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 20	Bulbs, at Protheroe & Morris' Rooms. Roses, Plants, Shrubs, Bulbs, &c., at Stevens' Rooms. Sale of Nursery Stock, at the Northgate Nurseries, Chichester, by H. W. Rendell.
THURSDAY,	Oct. 21	Bulbs and Palms, at Protheroe & Morris' Rooms. Orchids, Palms, &c., at The Gardens, Stowe House, Buckingham, by Protheroe & Morris. Bulbs, Plants, and Roots, at Mr. Stevens' Rooms.
FRIDAY,	Oct. 22	Bulbs, at Protheroe & Morris' Rooms. Orchids, at Protheroe & Morris' Rooms. Fruit Trees, Roses, and other Stock, at the Cart House Lane Nursery, Horsell, near Woking, by Protheroe & Morris.
SATURDAY,	Oct. 23	Bulbs, at Mr. Stevens' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—49° 5'.

ACTUAL TEMPERATURES:—

LONDON.—October 13: Max., 52°; Min., 42°.

PROVINCES.—October 13 (6 P.M.): Max., 57°, at Valentia Island; Min., 41°—44°, Scotch Coast.

The Composition of Orchids.

IN the *Comptes Rendus* for July 12, the results are given of experiments made by M. LECLERC DU

SABLON regarding the constituent parts of the tubers of hardy Orchids. The author says that: The materials stored in Orchid-tubers are principally composed of starch and a mucilaginous matter which is the same in composition and has almost the same properties as starch.

New tubers usually appear in December or January; they grow rapidly, and in the following season, in April, are of about the same size as the old ones. Then, in May or June, when the stem is dried up and the old tubers are withered, the young tubers pass into a state of latent life, and begin towards the month of September to produce a new stem. During winter and spring the tuber is gradually absorbed to form the stem and leaves, then the flowers and fruit.

There are then, in the life of an Orchid-tuber, two periods of active separated by one of latent life. The first period of active life extends from December to May—this is the period of formation; the period of latent life is from May to September, and the second period of active life commences in September and ends in the May of the following year—this is the period of destruction.

In analysing the tubers at different seasons of the year, the relation existing between the chemical composition and the state of development is seen. The substances analysed are: 1st. The reducing sugars or glucose; 2nd. The non-reducing sugars or saccharoses; 3rd. Amylaceous matters or amylose composing the starch and mucilaginous matters soluble in water and insoluble in alcohol at 90°. M. LECLERC DU SABLON did

not separate the starches from the mucilaginous matters, as all these substances play an analogous part in the nutrition of the plant. The analyses were made in almost every month during the years 1896-1897. From February to June the plants have two tubers, a young and an old one, which were, of course, analysed separately. The species which yielded the materials for study is *Ophrys aranifera*.

Date.	Weight of dry Matter.	Glucose.			Saccharose.		Starch.	
		Gr.	Gr.	Per 100.	Gr.	Per 100.	Gr.	Per 100.
February 4 ...	0.301	0.033	10.0	0.041	13.0	0.008	32	
March 16 ...	0.514	0.036	7.0	0.036	7.0	0.228	44	
April 27 ...	0.026	0.020	2.0	0.004	0.4	0.529	57	
June 1 ...	2.331	0.003	0.1	0.007	0.3	1.579	67	
August 6 ...	2.960	traces	...	traces	...	2.480	70	
September 10 ...	3.198	"	"	"	"	2.085	65	
October 15 ...	2.413	0.043	1.7	0.045	2.6	1.470	60	
November 20 ...	0.937	0.036	3.8	0.119	12.0	0.561	59	
December 22 ...	2.547	0.192	7.0	0.380	15.0	1.469	57	
February 4 ...	0.848	0.074	8.0	0.164	19.0	0.320	37	
March 16 ...	0.709	0.063	9.0	0.125	17.0	0.205	29	
April 27 ...	0.372	0.070	18.0	0.050	13.0	0.660	16	
June 1 ...	0.350	0.130	8.0	0.020	5.0	0.035	10	

At each of the seasons of the year mentioned in this table, were made four or five experiments involving some twenty tubers; the results were not always identical, especially as regards the amylaceous-matters; the numbers given are those most nearly approaching the mean.

The figures in the table indicate the proportion of glucose, saccharose, and amylose yielded by 100 parts of analysed dried matter. It is shown how, during the period of the formation of the tuber, from February to June the proportion of starchy-matters is constantly increasing; the sugars, on the contrary, which are at first in considerable proportion, disappear almost wholly.

During the period of repose, corresponding nearly to the summer, the only carbo-hydrates found in the tuber are the amyloses, by which the part taken by the reserve matters is clearly shown.

Then, during the second period of active life, which corresponds with the disappearance of these reserve-substances, the same phenomena are produced as during the period of formation, but in inverse order: the proportion of amylaceous matters steadily decreases, while the quantity of sugar increases; the saccharose is, at first, in much greater proportion than the glucose; while, at the end of the vegetative period, it is the glucose which preponderates. The process then, to speak generally, is as if the amyloses were transformed into saccharose, and the saccharose into glucose.

The tubers of *Ophrys*, on the one hand, furnish a very clear example of the relation existing between the chemical compositions of the organs with their reserve matter, and when these are developing, and of the part taken by sugars in the formation and destruction of amylaceous reserve. During the period of formation, it seems as though the starch might be formed at the expense of the sugars; during the period of repose the sugars are lacking, and during the period of destruction the starch is digested and submitted to a series of transformations which lead to the saccharose condition, and then to the glucose.

It is to be noticed that with Orchids, as with many other perennial plants, summer is a season of rest, of apparent rest, while winter is the period when vegetation is most active.

The Requirements of Plants under Cultivation.

WE have received the following very interesting and suggestive letter from Mr. H. J. ELWES. It relates to one plant only (*Buphane toxicaria*), but the principles laid down apply to any or all plants in their degree. In considering the propriety of attempting to imitate natural conditions, we must bear in mind not only our inability to reproduce those conditions in their entirety, but also the fact that plants differ very much in their powers of accommodation and pliancy; and, moreover, that in Nature plants have to grow where they can, or where competition allows them to be, not necessarily where they would do best:—

"I have had *Buphane toxicaria* for twenty years or more, and never flowered it till this year. I have never heard of its flowering in England except from newly-imported bulbs, and I think HERBERT says much the same of it. Knowing that the plant was a native of the dry Kalahari desert of South Africa, where the rain is very scanty, the soil very sandy, and the climate excessively dry, I had roasted and starved the plant on a shelf in the greenhouse. When, however, my gardener began to treat it in exactly the same way as we treat *Nerines*, and gave it plenty of liquid-manure during its growing season, the bulb swelled up, became quite hard, and the leaves became much more luxuriant. This year it threw up a flower-spike at the beginning of September. The duration of the flowers is very short, as they were withered when I returned from Norway on October 5. I mention this fact as an additional confirmation of the truth of a theory put forward in your columns some six or eight years ago by the Director of Kew, which led to a very interesting correspondence, in which I opposed his contention. This was briefly, if I remember right, that the empirical knowledge of a clever cultivator would often succeed, when attempts to imitate the natural conditions under which plants grew in their native habitat, by persons who knew them in their own countries failed.

"The longer I live the more convinced I am of the impossibility of imitating the natural conditions of many plants, which are often cultivated successfully under extremely different conditions of soil, climate, and moisture. It seems to me that the constitution of a plant (the term being used exactly in the same sense as it would be if applied to a human being), is one of the most inexplicable things in Nature, and that until we have tried it we can never tell what a plant really wants under cultivation. Often when we have tried it, we are obliged to confess that we cannot tell, but sometimes we discover by accident that the secret of success is something that no one, who knew the plant in Nature, would have suspected. Therefore, I hope that this note may be considered by my friend Mr. THISELTON DYER as a withdrawal of my opposition to his theory; and I must add my congratulations to him and Messrs. NICHOLSON and WATSON on the extraordinary success of their treatment of the many rare, curious, and interesting plants which delight me whenever I go to Kew."

ECHINOCYSTIS LOBATA.*—This is an annual trailing-plant, which will not find favour with those who love brightly-coloured flowers, but the elegance of its habit will commend it to others. It is a Cucurbit native to the North Eastern States of America. The plant is nearly glabrous, with slender, angular stems, palmately-lobed leaves, branching tendrils, and male flowers in branching panicles, the female flowers solitary, shortly-stalked, from the same axil as the male flowers, and ripening into an ovoid greenish berry, studded with small prickles. For the rest, our illustration (fig. 82, p. 271) will suffice. Our specimen was kindly forwarded by Messrs. JAMES VEITCH & SONS, Chelsea.

* *Echinocystis lobata*, Torrey and Gray, ex Gray, *Manual* ed. vi. (1890), p. 195.

ORD.—An interesting account of the herbarium preserved in the Botanic Garden of the University of Padua, recently published at the Clarendon Press. The best collection of dried plants is that made in Italy about 1606 by a Capuchin monk, R. of Reggio. BOBART and MORISON's herbarium next, followed by that of C. DU BOIS. The latter's collection is of great historical value, and

should contain many plants of great horticultural interest. The aim of the present Curator, Mr. DRUCE, is to render the herbarium as complete a representative as possible of the flora of Europe and of the Mediterranean basin.

THE VICTORIA MEDAL.—We understand that the very much honoured 'ones (V. M. H.) are to be

the finest species of the genus, and is a native of New Guinea. The two lower sepals are coherent into a long sheath-like body, and are much longer than any other part of the flower; t. 7557.

Agave Bouchei, Jacobi: one of the few species that have a firm woody trunk, and which do not die after flowering. The leaves are finely toothed at the margins, and the inflorescence is densely spicate.



FIG. 82.—ECHINOCYSTIS LOBATA: HARDY ANNUAL. (SEE P. 270.)

as may be said of that of DILLENIUS. The herbarium forms the basis for the magnificent *Index*, and a number of unpublished water-drawings by FERDINAND BAUER are still in the library. We do not find mention of the interesting collection of DAMPIER'S. The modern collections comprise the FIELD-BARIUM, bequeathed in 1852, and to which additions have been made, particularly the one of the late WILSON SAUNDERS, which

invited to a luncheon at the next meeting of the Royal Horticultural Society on October 26, when the Medals will be conferred on the selected recipients present on the occasion.

THE BOTANICAL MAGAZINE.—The October number contains coloured illustrations and descriptions of the following plants:—

Cirrhopetalum robustum, Rolfe; see *Gardeners' Chronicle*, 1895, i., p. 771, fig. 116. This is the

The plant is a native of Mexico, and flowered at Kew; t. 7558.

Primula sinensis, Sabine: a coloured figure of the wild form is here given, and a summary of its history as recorded in these columns, and in Mr. A. Sutton's paper in the *Journal of the Royal Horticultural Society*, 1891, p. 99; t. 7559.

Calathea rufibarba, Fenzl: a Scitamineous plant of tufted habit, with long, erect, purple-spotted, hairy leaf-stalks articulate at the summit to linear

lanceolate leaf-blades. Flowers yellow, each about 1 inch long, in dense clusters, borne on a short stalk rising directly from the root stock. Kew; t. 7562.

Perisanthes polita, Lawson: a highly curious tropical climber allied to the Vine, but with cordate entire leaves. One of the branches of the tendrill becomes flattened out into a knife-like purplish blade, bearing complete flowers sessile or sunk in little pits, and also incomplete flowers raised on short pedicels. Kew; t. 7563.

THE BOTANIC GARDEN, ZÜRICH.—A hasty run through this garden, founded by Conrad Gesner in the 16th century, enabled us recently to note that the arrangement of the plants is made not only according to morphological characters and natural affinities, but also in accordance with biological peculiarities. There are, for instance, plants selected in illustration of pollination by the wind; others are intended to exemplify the dispersal of the seed by the same agency as in the case of *flügel-früchte*, or winged seeds. Berry-bearing plants are selected as illustrations of the distribution of plants by means of animals or birds. *Salvia* shows how the attractions of the flower are increased by the coloured bracts, "*Erhöhung der auffälligkeit durch extra florale Schauapparate*." The garden contains a bust of HEER, and occupies a pictorial situation on an eminence or old fortification overlooking the town. In one part is a rocky built of red-stone, with deep pockets for the plants. Time, or the want of it, forbade even the slightest examination of details, but the general glance we were enabled to give, sufficed to give the impression that the collection was rich and well cared for. Attached to the garden is an excellent museum, of special interest to students of Swiss botany, recent or pre-historic.

THE SURVEYORS' INSTITUTION.—The first ordinary general meeting of the session 1897-98 will be held on Monday, November 8, 1897, when the president, Mr. CHRISTOPHER OAKLEY, will deliver an opening address. The chair will be taken at 8 o'clock. Those proposing to enter their names for the Students' Preliminary Examination, to be held on January 19 and 20 next, must intimate their intention to the secretary before the last day of November. It is proposed to examine candidates from the counties of Lancashire, Cheshire, Yorkshire, Durham, Cumberland, Westmoreland, and Northumberland, at Manchester. Candidates from other counties in England and Wales will be examined in London. Irish candidates will be examined in Dublin. Students eligible for the Proficiency Examination (which will commence on March 21 next) must give notice of the sub-division (table A of rules) in which they elect to be examined, not later than the last day of October.

ORIGIN OF SPECIES.—We have often referred to the tuberous *Begonia* as presenting an illustration of the artificial production of a species; nay, some have gone so far as to constitute a new genus under the name *Lemoinea*. The *Streptocarpus* hybrids furnish another illustration. A new type has been evolved by the agency of the gardener, and this type has so far become fixed that many of the coloured varieties, and even a pure white one, reproduce themselves from seed.

DRACÆNA WARRENI, HORT.—This is one of the narrow-leaved section; indeed, its graceful, elegantly-curved leaves are almost linear-lanceolate, and of a very rich crimson colour, and very effective for decorative purposes.

GREENHOUSE RHODODENDRONS.—The many double forms of various colours raised in Messrs. VEITCH'S nurseries originated from seed taken from the same capsule. On the contrary, seeds from these double varieties cannot be relied on to reproduce the colour or form of the parent.

NERINE FOTHERGILLI MAJOR.—One of the houses at Messrs. VEITCH'S is ablaze with the brilliant reddish-crimson flowers of this variety. To secure a plentiful production of flowers, the bulbs require to be allowed to become pot-bound.

THE ANNUAL DINNER of the United Horticultural Benefit and Provident Society on Tuesday last

was a distinct success. We are pleased to remark this as an additional evidence of the progress of this useful benefit institution (see p. 278).

MEETING OF THE GHENT CHAMBRE SYNDICALE DES HORTICULTEURS BELGES.—At the last meeting of this society a new *Chrysanthemum*, "*Afsné*," grown from seed obtained by M. Ernest Fierens, secretary of the Ghent Royal Agricultural and Botanic Society, from M. Foutaba, of Tokio, was distinguished by the beautiful ivory whiteness of the flowers, which measure nearly 10 inches across; the florets elegantly bent back, the whole very distinct-looking. M. Bedinghaus showed *Coronilla glauca*, flowering freely. There was a good variegated *Clivia* from M. Paul De Schryver, and *Dracena australis aureostriata* from MM. Carels and Haussens. *Vriesea* *hyb. nov.* (Baron de Sélys), from V. conferta × *psittacina*, raised in the Liège Botanic Garden, and shown by M. Pynaert van Geert, was noticeable for the dark blood-red colouring of the flower. M. Louis De Smet-Duvivier sent an excellent set of seedling *Bertolonias*, with green foliage, streaked and spotted with clearer green, silver-green, and dark yellow. His *Begonia* President Truffaut, and especially his *B. coloris nova*, were very interesting, the latter plant bronze-green, very curious, with greenish-yellow veins with a metallic lustre. *Ch. De B.*

LOUGHBOROUGH AND DISTRICT GARDENERS' ASSOCIATION.—Under the auspices of this association a fruit-show was held in the Corn Exchange, Loughborough, on the 5th inst. During the afternoon a lecture upon fruit culture was delivered by Mr. A. H. PEARSON, of the Chilwell Nurseries, Nottingham, who described the exhibition, which consisted of 300 dishes of fruit, as excellent, and representative in its character. All the fruits were staged by members of the association. The lecture by Mr. PEARSON was considered in every respect helpful and interesting. From Mr. D. ROBERTS, Prestwold Hall Gardens, and Honorary Secretary, we have received the report of the society for 1897, and are pleased to congratulate the members upon its satisfactory character, as showing the society's capacity for usefulness.

THE PEOPLE'S PALACE AND EAST LONDON HORTICULTURAL SOCIETY.—Mr. C. E. OSBORN, F.I.S., Secretary of the above, writes as follows: "I shall be glad if any readers of your paper will kindly send exhibits of *Chrysanthemums* to our next show, on November 11, 12 and 13. Our society numbering about 500 members, consists mostly of working men, who would be delighted to see blooms sent by others living in more congenial districts than the East End."

MR. W. SWAN.—We learn that this well-known Orchid cultivator, and good all-round gardener, is leaving Bystock, Exmouth, in consequence of his employer, J. P. BRYCE, Esq., having relinquished Bystock in favour of a London residence. Mr. SWAN, who has served in the capacity of gardener, bailiff, and general estate manager for several years, will be at liberty in the course of a few weeks.

THE FLÜCKIGER MEDALLIST.—The first award of the medal struck in honour of the late Professor FLÜCKIGER, the eminent pharmacist and collaborator with DANIEL HANBURY, has been made to Mr. E. M. HOLMES, the Curator of the Museum of the Pharmaceutical Society. Those who know the extent and variety of Mr. HOLMES' knowledge of medicinal plants and their products, and appreciate his industry, willingness to oblige, and retiring modesty, will cordially approve of the honour conferred on him by the German Apotheker Verein. Mr. HOLMES' tastes have always been in the direction of horticulture and botany as applied to pharmacy, and his garden at Sevenoaks is also pressed into the service. Mr. HOLMES is one of our most distinguished Algologists.

LILIUM AURATUM.—Our contemporary, the *City Press*, in its issue for October 9, contains a figure of a truss of *Lilium auratum* blooms taken from a plant which, with six others, was grown in a window-box in Cheapside by Mrs. A. A. WOOD. The circumstance,

says the *City Press*, "is certainly noteworthy, and affords further proof, if proof be needed, of the improvement which has of late years manifested itself in the atmospheric conditions of the City." *Lilies* of all kinds are well adapted for town gardening, their foliage enduring for six months only, and that, too, at a time of the year when smoke, blacks, and fog are least prevalent. In conjunction with evergreen shrubs, *Dracena australis*, *Yuccas*, and hardy Ferns, *Lilies* form admirable balcony and window plants.

CONE-DESPOILERS.—A correspondence has lately been going on in the *Times* with reference to the injury which squirrels do to cones, and also to the shoots of Coniferous plants. In the Botanical Museum at Zurich are specimens of cones eaten by field-mice, by squirrels (*eichbörnchen*) and by jays (*habes*), respectively. The mode of attack is different in each case. In one case the effects of the attack of all three depredators are shown on one and the same cone.

"CATALOGUE OF PLANTS AT LA MORTOLA."—We have received the alphabetical catalogue of Plants growing in the open air in the famous garden of Commendatore Thomas Hanbury, Palazzo Orsini, La Mortola, near Ventimiglia, Italy. This list is compiled by Mr. K. Dinter, and comprises the name of the plant, the author's name, the reference to the work in which the plant is described, and indications as to its affinity, native country, and time of flowering. About 4000 species are thus catalogued, a number which will serve to give some idea of the richness of this favoured garden.

ROCK AND SUN-LOVING FERNS.—It is a mistake to consider all Ferns as plants requiring shade and moisture. There are, on the contrary, many which like full sunshine and bright light. Without counting *Cystopteris alpina* and *fragilis*, which grow in our walls as well in sun as in shade, there is one class of Filices which actually require sunshine. *Cheilanthes* from the Old World, as well as those from the new, only do well in a sunny aspect. I have had experience of this for some years. We could not succeed at Geneva in cultivating *Cheilanthes odora*, *lanuginosa*, and *vestita*. In spite of every care given to them, they suffered from general weakness, ending in decay. At last I one day saw *Woodia hyperborea*, that delicate and fragile plant, in full sun along an alpine road in Italy, and an idea occurred to me; and on returning I planted all my *Cheilanthes* in sunshine on a south wall. The result was good, and I recommend the plan to Fern-growers. But it was necessary also to change the soil in which these plants were cultivated, and we set them in soft porous mould composed of sphagnum-moss, peat, and sand; good drainage and frequent watering ensured an immediate and excellent result. That which proved satisfactory for *Cheilanthes* we then tried for *Woodia hyperborea* and *ilvensis* (the treatment did not do for *W. obtusa*); then for *Scolopendrium hemionitis*, that pretty and curious Fern from the South so rarely met with in gardens, where it is considered difficult to grow. Then we subjected to the same treatment our *Nothochloa Maranta*; and these lovely Ferns, which formerly did not do successfully with us, turned out marvellously well. It is, then, absolutely certain that many species of Ferns—examples could be multiplied—require sun and plenty of air. While on the subject of Ferns, I wish to mention a curious case of fructification on both surfaces of a *Scolopendrium*; the spores are even more numerous on the upper surface than underneath the frond. This phenomenon I never observed before; it occurred in the Jardin Alpin d'Acclimatation on a plant raised there from spores. H. Correvin, Geneva.

FLOWERS IN SEASON.—Some glorious bunches of early-flowering *Chrysanthemums* reach us from the Scots nursery of Messrs. DOBBIE & Co., at Rothesay. They are all very beautiful, and no plea for their cultivation need be urged when they afford such flowers from an open field so late as October 8. It may be questioned if it be advisable to seek to obtain large-flowered varieties in bloom during September, whilst Roses and annual Asters are still

moderately plentiful; but as to the small, prettily-tinted varieties represented by those before us, their presence during that month is altogether desirable. They are the forerunners, the promise of the larger, handsome *Chrysanthemum* blooms that help so greatly to enliven the month of November—naturally the duller in the whole year. As we look at some of the flowers, the close resemblance in colour to most of the vegetation at this season is very noticeable; they combine a large number of exquisite autumn tints. This section of *Chrysanthemum* has this season been put upon its trial in the gardens at Chiswick, and the judgment of the Floral Committee of the Royal Horticultural Society has been passed upon the varieties there. There are now a fair number of sorts that bear the recommendation of this committee, and some notes upon the best of those that bloomed in September appeared in the *Gardeners' Chronicle* of last week, p. 247. Grouping the varieties from Messrs. DOBBIE & Co. into colours, we find we have white flowers (or pale yellow ones that we will deem as white), including Mrs. Cullingford and M. C. Desgranges; pale pink, such as Longfellow and Mrs. Pitcher; deep pink and rose-coloured varieties, including Madame Marie Masse, Strathmeath, Le Poete des Chrysanthèmes, and Blushing Bride; deep reddish-brown flowers, with various shades of bronze and gold upon some of them, including Alice Butler, Scarlet Gem, Bronze Bride, &c.; various shades of buff and apricot, illustrated by the varieties Percy's Seedling and La Luxembourg; and bright yellows of the style of *Précocité*, G. Wermig, and Flora.

— Some fine spikes of the distinct *Antirrhinum Hendersoni* are sent us by Mr. J. W. FORBES, Beaulieu Nurseries, Hawick, N.B. The ground-colour is white, with a belt of violet-purple round the margin of the segments, and across the pouch. The variety is as old as it is distinct, but is not frequently seen.

STOCK-TAKING: SEPTEMBER.—It is again satisfactory to note an increase in the Revenue receipts for the second quarter of the financial year, as compared with the same period last year. The increase is not very marked, but still it is an increase, and helps to bring up the increase to over a million sterling for the half year, compared with the first half of the financial year in 1896. The Board of Trade Returns show an improvement on the side of imports to the tune of £2,189,547. The total amount for the month of September was £35,195,893, against £33,006,346 for the same month in the preceding year. The greatest increase is to be found in articles of food and drink, duty free, £1,357,663; also of £343,167 on dutiable articles; timber figures largely in the "increase" column; "raw materials for sundry industries and manufactures," £921,707. There is a decrease in "raw materials for textile manufactures" of £577,810. The following is extracted from the "summary" table of imports:—

Imports.	1896.	1897.	Difference.
Total value ...	£ 33,006,346	£ 35,195,893	+ 2,189,547
(A.) Articles of food and drink—duty free ...	11,218,704	12,576,367	+ 1,357,663
(B.) Articles of food and drink—dutiable ...	2,282,855	2,626,022	+ 343,167
Raw materials for textile manufactures ...	2,576,346	1,998,536	- 577,810
Raw materials for sundry industries and manufactures ...	4,541,461	5,463,168	+ 921,707
(C.) Miscellaneous articles ...	1,155,708	1,023,637	- 132,071
(B.) Parcel Post ...	102,500	76,522	- 25,978

The fall in the prices of cereals recorded week by week in our little table is in great part due to increased imports; but there is no decline noticeable in the price of bread. The value of the imports for the past nine months foots up at £329,958,835, against £316,293,512 in the previous year—an increase of £13,665,323. It may not be amiss to notice here the latest reliable statistics

connected with the competition of our Teutonic friends. The statistics inform us that the United Kingdom holds the most important place in the list of countries trading with Germany; this, however, applies to imports into Germany from us as well as to Germany's exports to here. In 1893 the value of German exports to this country showed a nominal increase of £35,700,000 as compared with £33,900,000 in 1895; but the proportion borne by these exports to the United Kingdom to the amount of Germany's total exports shows a decline—the figures for the last four years being, 1893, 20.7 per cent.; 1894, 20.8 per cent.; 1895, 19.8 per cent.; 1896, 19 per cent. In the figures relating to German imports from the United Kingdom, there is no cause for alarm. Our share of the imports into Germany last year was 14.2 per cent., as compared with 13.6 per cent. in 1895; while in regard to value, the figures rose from £28,900,000 in 1895 to £32,360,000 in 1896. Coming now to the imports of fruit, roots, and vegetables for the past month, we place our useful and usual little table before the reader, as follows:—

Imports.	1896.	1897.	Difference.
Fruits, raw:—			
Apples ... bush.	682,735	247,653	- 435,082
Cherries ... "	...	...	...
Plums ... "	63,845	379,014	+ 315,169
Pears ... "	126,014	311,575	+ 185,561
Grapes ... "	231,564	217,790	- 13,774
Unenumerated ... "	157,224	251,154	+ 93,930
Onions ... "	703,227	755,499	+ 52,272
Potatoes ... cwt.	36,493	91,895	+ 55,402
Vegetables, raw, unenumerated ... value	£108,807	£112,747	+ £3,940

The "differences" in the above will be fully appreciated by all interested. It may not be out of place here to notice that the commission appointed to consider the condition of our West Indian possessions have nearly finished their labours, and the majority are in favour of helping the complaining islanders in the multiplication of baskets in which to carry their eggs to market—to subsidise carrying companies in the way of steamers and the organisation of botanic gardens, so as by this means to introduce fresh products in the way of fruits and vegetables for exportation to the United States and to the Mother Country. This may enable those now suffering from bad sugar markets to become, to some extent, independent of them. Our

EXPORTS

now demand attention. The total value for last month was £18,305,275, against £19,824,125, or a fall amounting to £1,518,850. Under the heading, "Articles Manufactured and Partly Manufactured," viz., "Yarns and Textile Fabrics," the decrease is £1,364,580. Further we need not go. Little use here to account, or try to account, for the falling off. The decrease for the nine months is placed at £4,664,624. As we all know, the social warfare continues its ruinous work—"pity 'tis, 'tis true."

NEW PLANTS (?) OF THE SWAZI SURVEY.

Novelties will never come to an end if they are accepted on the representation of unscientific explorers, as we fear they often are. A correspondent, writing from Cape Colony recently, encloses a cutting from the *Star* (South African):—

NEW PLANTS AND BIRDS.

"A *Star* (Cape Town Journal) reporter had recently the pleasure of an interview with Mr. VOS WELLMAN, formerly State Surveyor-General, who had just returned from Swaziland, where he was engaged in surveying the Vermaak Concession, in the southern part of that interesting land. The returned traveller was full of news, and willingly parted with it when questioned. "I have some news," he began, which will be of interest to Mr. CHAMBERLAIN, namely, that in Swaziland, and different parts of the Transvaal, I have encountered no less than thirty new varieties of Orchids, which have never yet been cultivated. One of these possesses a bulb scented something like eau de cologne, and possessing the largest flower I have seen amongst the South African Orchids. In Swaziland I found at least eight new Lilies. One of these is called by the Swazis *Umfana amacetwana*, and when it is partaken of, the incautious eater froths at the

mouth and falls in convulsions, which speedily end in death. The Lilies were pure white, with dark purple inside, yellow with the same internal colouring, light pink, pink, and crimson. Instead of the usual arrow-shaped leaf, two varieties had trefoil and oblong elliptical leaves respectively. I found also a Lily of the Valley in Swaziland of a beautiful orange colour. Gladioli were in lavish abundance, including the Green Giant, with leaves 3 inches in length. Water Lilies of all kinds were to be found, though it was sometimes hard to secure specimens. I asked a Kafir to go into a certain pool for a Lily, and offered him £10; but he replied that he would not go in for ten oxen. Crocodiles? Yes; the place was swarming with them. A particularly beautiful item I came across was a tree covered all over with white flowers bordered with red. It must be very rare. Hundreds of the rarest Ferns are constantly met with. For instance, *Osmunda regalis* fetches about 7s. 6d. a piece in Capetown; but where I was you could take away waggons-loads of it. Of course, there was every variety of Tree Fern. A very striking bird is to be found about the parts I was engaged in surveying. It is only heard singing when the sun is setting, and then it runs clean up the diatonic scale, being answered in the distance by its mate. Many birds of remarkable plumage, and several of the pigeon kind, which I have never seen before, frequent the groves. I was especially interested in a variety of green pigeons. What about game? Game is fast disappearing, but the Pongola reserve is still full. There are also plenty of all kinds of animals in the dense forests of the Lobongo flats, which the Boers call "stables," because the hunted beasts can run there and be safe."

Explorers, for the purposes of survey, often imagine they are the first to see the flora of a, to them, new country; but, in the majority of instances, the botanical traveller or trader interested in plants, has been before them, and specimens of the plants they imagine to be new are often common in British gardens, or well represented in herbaria. Even in the case of a positively newly-discovered country, it by no means follows that even a small proportion of the plants should be new, if the surrounding country has been previously explored and opened up. That most of the so-called Orchids will not be Orchids at all is highly probable. In the so-called new Lilies it is not difficult to recognise *Richardia melanoleuca*, *R. Rahmanni*, *R. Pentlandi*, *R. Elliotiana*, or other varieties of *R. hirtata*; and in the orange-coloured Lily of the Valley, *Sandersonia aurantiaca*. For the rest, *Crinum* and *Valottia*, generally called Lilies, will probably supply their proportion of the wonders.

THE WELSH VINEYARDS.—We have received a statement from Mr. PETTIGREW, gardener at Cardiff Castle, upon the yield of vintage-Grapes from the vineyards of the Marquess of Bute, in several localities in Glamorganshire. Three bunches of Grapes, of the variety "Gammy Noir," which accompany the letter, are sent as being typical of the produce from the vineyard at Swanbridge. They differ considerably in weight, the heaviest being nearly double that of the smallest bunch; together, they weigh 23 ozs., thus averaging nearly $\frac{1}{2}$ lb. per bunch. The crop is described as greater than in any previous year, and as the present writer in 1893 observed upon the same Vines an average of about a dozen bunches per Vine, the crop should prove this season to be about 6 lb. of Grapes per Vine. The berries are not so sweet as in several former years, but they appear well developed, and of capital colour. The indifferent weather during August and September is blamed for the deficiency in sugar. Nevertheless, Mr. PETTIGREW estimates a vintage of about thirty hogsheads of excellent wine, and we assume a little cane-sugar will be added to compensate the deficiency of Grape-sugar. The vintage was commenced on the 7th inst., and lasted four or five days. The Swanbridge Vineyard is close to the sea-beach, not a great distance from the growing docks at Barry. The land slopes a little to the south-west, and towards the sea. The red soil is very stony, and in some places not more than 1 foot above the rocks. At the other vineyard, at Castell Coch, about 5 miles upon the other side of Cardiff, and some distance from the sea, the crop of Grapes, which early in the season promised to be good, has been practically ruined by mildew. There are 4 acres there, the Vines are a little older than those at Swanbridge, and the site is different, the slope being much more acute. At the top is a plantation of forest trees that surrounds the ancient

castle. It is possible that during very dry seasons, such as this one was until the end of July, the soil upon the slope becomes too dry. At any rate, trees and hedges alike suffered from mildew two months ago when we visited the place, and it was said that the fungus first spread from the hedges to the Vines. The Bordeaux Mixture has been used repeatedly, and all measures that the continental growers use to combat the mildew have been adopted with little success. At Swanbridge the Vines are not attacked by the pest at all, and this vineyard will consequently pay very much better than that at Castell Coch on account of the extra yield. Upon the whole, it is satisfactory to find that the yield of Grapes for the present year will be a decidedly remunerative one, and the question arises, whether it would not be worth while to attempt the cultivation of vintage Grapes in favourable localities on the south coast, say, in Sussex and Hampshire.

TECHNICAL INSTRUCTION IN HUNTS.—Mr. THOMAS BUNYARD has been appointed Instructor in Horticulture for a few weeks in this county, and gave his first lecture on Monday at Great Gidding, the other two centres being Winwick and Thurning. The audiences have been fairly good, but the "Feasts" peculiar to this part of England at this season keep many away, and we can hardly blame the agricultural labourer that he prefers a good substantial dinner to going to a cold school-room to listen to instruction in gardening.

PUBLICATIONS RECEIVED.—*Lorna Doone* (R. D. BLACKMORE), a cheap sixpenny edition of this popular novel (SAMPSON, LOW, MARSTON & Co., Ltd.).—*Proceedings and Journal of the Agricultural and Horticultural Society of India*, for April to June, 1897. Among the contents is an interesting paper by Mr. A. M. Sawyer, contributed to the "Indian Forester" on the subject of Tapioca Cultivation in Travancore.—*Proceedings of the Agri-Horticultural Society of Madras*, April to June, 1897; contains a list of plants in flower, and of plants received and sent out.—*Bulletin of the Botanical Department, Jamaica*, April to June. This includes notes on Satin Wood (*Fagra flava*), with two illustrative plates; Pea-nut (*Arachis hypogæa*), Oil-tree (*Prioria copaifera*), Coccidæ or Scale Insects, and Synoptical List of Ferns.—*Queensland Agricultural Journal*, August. Contains articles on: the Agricultural Possibilities of Western Queensland, Maize-growing on Scrub lands, the Velvet Bear (*Dolichos multiflorus*), Fruit Culture in Queensland, Grape Fruit, Scale (Coccidæ), Caoutchouc, and other subjects connected with crops and live stock.—*Fungus Diseases of the Raspberry*. Issued by the Department of Agriculture, Victoria. A pamphlet, by Mr. D. McAlpine, on the Raspberry-root fungus (*Hypholoma fasciculare*), and the Raspberry anthracnose or *Gleosporium venetum*. Full and illustrated descriptions of these pests are given, with directions for coping with them.—*The Land of Sunshine*. A magazine of California, edited by CHAS. T. LUMMIS, contains a paper on collecting Californian Ferns, which is described as being "superbly illustrated," and other articles descriptive of Los Angeles and the district. It is the August number that is now before us.—*Erythea*. A Journal of Botany, West American and General. The August number contains Notes on Californian Bryophytes (continued) by M. A. HOWE.—*Nature Notes*, October.

STREPTOCARPUS WENDLANDI.

THE illustration of this fine and very singular species (fig. 83), represents a group grown by Mr. F. Parfitt, gr. to E. Horne, Esq., South Park, Reigate. The plants were sent for exhibition to the local flower show on July 31 last, and there attracted much notice, being so novel and of such quaint appearance. The strain is that of Messrs. Sutton & Sons, Reading, and Mr. Horne's stock was from a seedling plant kindly sent by Mr. G. F. Wilson, of Weybridge. Mr. Parfitt's treatment, which produces such fine plants, is to sow seed in June in a shallow pan, and on fine sandy

soil, and, of course, under glass. So rapidly do the seedlings grow, that they may be shifted at once from the pans into small sixties, and be placed in a close cool frame. By this comparatively hardy treatment the pots are soon filled with roots. A further shift into 48's is made, and finally into 24's. The compost consists of good turfy loam and well-decayed leaf-soil, with a fair infusion of sharp sand. The pots should be given ample drainage. During the winter, the plants being put into a greenhouse, the temperature ranges from 45° to 55°. The plants figured were in height from 30 to 36 inches, and the base leaves were 28 inches wide and 22 inches deep. The inflorescence was abundant, and very pleasing. A few such plants would be capital features in a decorative group. Mr. Horne's gardener merits all praise for the specimens of this *Streptocarpus* his cultivation has produced.

HOME CORRESPONDENCE.

JUBILEE CARPET-BEDS.—What hope is there for English gardens when such a work of tasteless ingenuity as the "Jubilee-bed," described in your issue of the 2nd, is considered the pride of one of the finest gardens in the land? To what end is this carpet-bedding manufactured? If for the admiration of visitors who crowd past it in hundreds, ought so false a taste to be encouraged? The ingenuity displayed is certainly praiseworthy; but what more is there to be said for the diamond centre and the crowns and the monograms, and the whole arrangement? When "Hampton Court" appeared in the table of contents of the *Gardeners' Chronicle* of Saturday last, I turned eagerly to the page, hoping to find the description of something new and beautiful; some special arrangement of fine colours only to be obtained on a grand scale, such as a purple mist of *Salvia* (*Bluebeard*, or is it *sylvestris*?) contrasted with the yellow-gold of the old-fashioned Golden Rod; or a fine arrangement of *Galtonias*, or the like. Alas, for the disappointment! After the Great Vine, which can never be uninteresting, came an account of the great Jubilee-bed, with its diadems and royal cyphers. A triumph of patience and gardeners' art, but is it a triumph of garden-craft? And is our beloved Queen honoured by any such thing so greatly, as if some other thing of equally costly, but of exceeding beauty had been arranged in that large oblong bed? Happy is the gardener who has the power to exercise good taste and skill on a scale so large as that of Hampton Court. We, of the puny little private plots and garden grounds, where we are continually thwarted by want of space, know only too well. E. V. B. [This kind of thing has not any of our sympathy or admiration, and the Hampton Court bed was merely instanced as affording our readers an idea of Jubilee horticultural exuberance. Several such beds may be, or were, found in other London parks, this year; and they find plenty of admirers. Ed.]

CAMOENSIA MAXIMA.—This shy-flowering leguminous climber is now in bloom in the Palm-house here. It was planted about three years ago under the stage, and trained to the roof. During this time it has reached the top of the annexe, a distance of about 20 feet. The growth was restricted to three shoots, and it is upon the well-ripened side-growths that most of the thirteen indefinite inflorescences have made their appearance. The number of flowers upon each raceme varies from sixteen to eighteen. These racemes are all axillary, and generally near the apex of the branches. About four months since the plant was severely root-pruned, and several large roots thicker than an ordinary pencil were cut. Whether this has hastened its flowering I cannot say; certainly the growth was checked, for another plant in the same house is now quite 30 feet high. No shading was given at any time. A description of these lovely flowers was given with figures in the *Gardeners' Chronicle* for November 14, 1896, p. 596. R. L. Harrow, Royal Botanic Gardens, Edinburgh.

"VENN'S BLACK MUSCAT."—Re, the bunch of Grapes sent last week, I observe you are asking for particulars of treatment of the same. I cannot speak regarding the starting of the vine, as I took over these gardens last March. There are several varieties grown in the same vine, namely, Muscat of Alex-

andria, Black Alicante, Black Hamburgh, and Venn's Black Muscat. The Vine-border has been watered once every three weeks, with water of the same temperature as the vinery, which was kept from 70° to 75°. After the Grapes began to colour, water was afforded once in four weeks, air being given at top and front as weather permitted. This week we have carefully examined the border, and find trace anything that would be accountable, except that the Vine seems to be very old. Would sufficient water at the commencement be the cause? When I took over these gardens I found the border in a very dry state; the Vine has not looked healthy all the summer. Vine. [Unless the border is thoroughly saturated, which could only be attained by excavating a small hole here and there down to the drainage, or uncovering the outlet drain, and seeing if any water had recently passed along, the border may still be in a dry state, the water afforded having been absorbed by the surface.] So much depends upon the kind of soil, its porosity or otherwise, depth of soil, number of drains, and of the surface, width of the border, if it be inside or outside or both. Your note affords no clue. Grapes were virtually converted into Raisins. how? Ed.]

THE LOQUAT, OR JAPANESE MEDLAR.—I have been interested by the correspondence between Clarke and Mr. George Harris, of the Ducal Gardens, Alnwick, in these pages; and I agree with Mr. Harris as to the character, form, size, and colour of the Loquat. I grew the plant for years on the back of a vine. The plant generally flowers abundantly in November in a temperature never lower than 45°, the flowers being greenish-white, with the odor of the Hawthorn. The time of ripening of the fruit varied considerably with the season. The plant is a shy fruiter, considering the prodigality of the blossoms. In some years the quality of the fruit is excellent, and if we judge the flavour of the fruit by its aroma, a rather comparison as a rule, we may take it that the flavour should be good. Rats will devour the fruit readily when on the verge of maturity; and, possessing an aroma so powerful that it pervaded all of glasshouses 300 feet in length. D. T. F.

THE PICTURE OF CATTLEYA SCHOFIELD GIGANTEA.—Some of my gardening friends remark that I have not given the name of the artist who painted Mr. Gratrix's flower, from which figure in the last issue of the *Gardeners' Chronicle* was taken. He is the son of Mr. Mitchell, who for twenty years gardener to the late Dr. Ainsworth of the Cliffe, Lower Broughton, Manchester. During that period Mr. Mitchell, sen., raised the two last crosses *D. Ainsworthii* and *D. Ainsworthii rosea*, which, along with other blood, has altered and proved the character of many of the progeny now in commerce. Young Marshall had a good school at his father's home in which to practice the delineation of Orchids, and he has done some excellent work. It was taken in hand by the Orchid Committee of Manchester and North of England Society, and painted for that committee's Records every picture that has received a First-class Certificate, and upon the whole he has done his work well. He painted illustrations of Mr. Rappert's *Cattleya Mossii* and *partiana*, and of Mr. Gratrix's *Cattleya Schofield gigantea*, his best drawings, and both have been illustrated in the *Gardeners' Chronicle*. J. A.

BOUGAINVILLEA GLABRA.—A fine plant is flowering in the corridor here, where it has a good house temperature, and grows vigorously, and flowers in the greatest profusion. I am inclined to think with "A. D." who in your issue of the 3rd suggests that a low temperature tends to produce richer colourings in the bracts. This same plant has been grown in the stove and Palm-house, and neither was the colour so intense as now. In a letter by Mr. J. Benbow, Abbotsbury Castle Gardens, Dorsetshire, in the *Gardeners' Chronicle* for December 1893, he mentions a plant as growing out of doors in a south wall, and on the date of his writing it withstood 5° of frost without losing its foliage, which would be interesting to know if any increase in the depth of colour was noticed in cases of a plant grown out of doors. R. L. H., Royal Botanic Gardens, Edinburgh.

DO ORCHIDS DEGENERATE?—After many years' experience, I, for one, can answer, yes! There are instances on record of *Cattleyas* and other Orchids being kept in health for a great number of years.

on *Vanda coerulea* as one that I have been with for a lengthened period; *Saccolabium* have seen growing in the temperature of a house for twelve years, flowering it well and for some years before I was acquainted. Now to name a few that do decidedly well: *Cattleya Dowiana*, *C. superba*, *Epidenmutum*, a beautiful Orchid when in flower sweet-scented *Phalenopsis*-like blooms. to the roof-glass of a Pine-stove, and you are rewarded with success for a year or two, then it "growing less" follows. Bolleas and I, I did well for a period of six years, and mented by all who saw them. One grower my success to a tree that cast its shade house just outside; however, the tree did not from degenerating. *Lælia harpophylla* the same house. One home-made bulb fine flowers upon a spike, the following seven, and there were fewer afterwards. *Lundesboroughianum*, another charming when in flower, refuses to grow after it in this country for a few years. *Oncidium*

more credit to the cultivator, than 5000 with limited space and means. What a wretched sight is a batch of *Odontoglossum Roezli* or *O. vexillarium* which are disfigured by thrip! The last-named plant I grew from a small plant into a beautiful specimen. It was exhibited at the Royal Horticultural Society's Gardens, and awarded a Silver Medal for good culture. The following year all the flower-spikes were pinched out as soon as they showed themselves, hoping to be doubly successful with it the next year, but alas! yellow thrip attacked it, tobacco-smoke, and dipping with insecticides were resorted to, causing the loss of a good many old leaves; eventually the plant was split up and repotted, but it never regained its former health and vigour. Another cause for degeneracy is the trying British winters we sometimes have, that of 1890 for instance, when no air could be admitted for weeks without lowering the temperature too much; and through an insufficiency of hot-water piping, a "fiery" smell is produced, which would make a sensitive man shudder as he entered the house, and exclaim this is not the place for Orchids! He is quite right, the conditions

years ago still in existence, both at Chatsworth and Bilton. I think I have shown that some Orchids do degenerate, but surely not to such an extent as to deter old enthusiasts from continuing their culture, or young ones from continuing it. Apart from the commercial value or speculative interest, they give abundant pleasure to ladies and gentlemen who are fond of seeing Nature in her most lovely and brightest garb. *Thomas Simcoe, Cardiff.*

PRESERVING DAHLIA ROOTS IN WINTER.—The recent frosts have settled most of the Dahlias for this season, and it is only in sheltered spots that they may yet produce a few tardy blossoms. In the open they are black to the roots, and the rot which follows frost will soon pervade the stalks and branches. There is reason to believe but comparatively little seed will be saved this season, owing to the general late bloom, owing first to the drought, and then the rains which followed caused the plants to put forth growth when they should be flowering. All plants destroyed by the frost may be cut over, leaving a foot to 18 inches of the main stem. As there is no knowing how soon sharp weather may set in, it will be wise, as a matter of precaution, to lift the roots without delay, choosing a fine and drying day for the purpose. It is well to spread a garden-mat on the ground, and as the roots are dug up, crumble away a good deal of the soil upon them, and then turn them upside down upon the mat, as then any moisture in the remains of the hollow main-stem will drain away; after being exposed to the sun and air for a time, more of the soil will crumble away, and then the roots should be either housed, or if left in the open all night, carefully covered over. When finally housed, it is well not to wash the roots, as is recommended by some, but allow what little soil is left upon them to crumble away into dust. Where and how the roots should be wintered is a matter of convenience to some extent. They will winter well on a dry shelf, in a cool, airy place, cool, not warm, as only sufficient warmth is needed to exclude frost. Glenny's advice is as sound to-day as it was forty years ago: "Dahlia-tubers should be kept where neither heat, nor damp, nor frost can reach them." Some Dahlia-growers among the Lancashire operatives have been known to hang their tubers up suspended from the walls of their living-rooms. Some bury their tubers in sand, or in any dry material which can be procured. Shelves in some dry, cool, frost-proof out-house or cellar are best. I have known roots preserved under the plant-stage of a greenhouse, and though drip fell upon them occasionally, they received little or no injury. But wherever they are placed, it should be where they can be examined at any time, as some roots do not winter well; there appears to exist an inherent tendency to decay. Those who preserved in the best manner have experience of this. No one would think of placing under a greenhouse-stage roots of very choice and rare varieties, but if from necessity the commoner sorts have to be placed there, they should not be placed in a heap, but laid out singly, so that the water, which cannot fail to fall upon them every time it is given to the plants, may lodge about them as little as possible. Even the preservation of Dahlia-roots during winter is not without its anxieties. *R. D.* [One of the best means we know of for preserving the roots of Dahlias, Cannas, *Salvia patens*, and *Marvel of Peru* is to place them on the floor of a dry cellar in a single layer, and cover them 2 inches deep in finely-sifted coal or wood-ashes, or the charred refuse from the garden bonfire, or charred earth. We have known the roots thus stored come out quite sound after an ordeal of 4° to 6° of frost; but they are safer if frost do not reach them. The evaporation of moisture from the tubers is arrested by the covering, and they are almost as plump in February as when stored, which is not the case with tubers stored like Apples on dry shelves. *Ed*]



83.—STREPTOCARPUS WENDLANDI IN THE GARDEN OF E. HORNE, ESQ., PARKE, REIGATE. (SEE P. 274.)

and its varieties, including *O. Marshallianum*, apt for years, but strength and vigour are gained. The same remark applies to that, *O. Jonesianum*; also to its giant ally, *O. n.* I have gazed upon the latter almost when I have seen it growing vigorously and profusely. Some of the *Dendrobies*, *McCarthyi*, *D. formosum*, *D. Dearei*, and *D.* are unsatisfactory after a time; but *D. formosum* you for all the pains you bestow upon it for late autumn flowering. Ask that champion grower, Mr. J. Cypher, of Cheltenham, thinks of it as a useful Orchid? I have seen odd form there—such bulbs! and such bloom! truly gigantic. Whether he can be successful with the other "miffy doers" now, not having seen them for the last five years. *Bensoni* used to be grown wonderfully year after year. I think that yellow thrip and more degeneracy amongst Orchids than ing. How many are the collections that are ruined by this insect! There are two aspects with this subject which are overlooked people. One is, that Orchids infested with thrip are dear at any price; moreover, 500 should be better looked after, and grown with

are so unnatural. Need one wonder at the sickly-looking leaves under such conditions, more particularly in a house of *Cattleyas*? The modern-built Orchid-house, lofty and very light, is much better adapted for preparing certain classes of Orchids to withstand the rigours of a severe winter than the old dwarf and darker structures. In the former, the pseudo-bulbs can be well-ripened and hardened, and they will pass through a much lower temperature uninjured during the resting season, and, of course, flower much better when well-matured. It is very pleasing to see in some of the great trade collections house after house full of plants, with that beautiful dark green hue indicative of health. The question may be asked, Do they flower as well or live as long as those grown under different conditions in an amateur's collection? Since writing these notes, I have read the excellent list of Sir Trevor Lawrence's. It is just the place one would expect to hear of a goodly number of good old Orchids, as well as some of the newer ones being successfully cultivated for many years. The most remarkable plant to my mind in the list is *Vanda Lowii*. As regards *Renanthera coccinea*, the great difficulty with that is to flower it (not to keep it). I think there are plants of the original imported forty or fifty

STIPA TENACISSIMA, L.—Desfontaines, *Flora Atlantica*, t. 30. North Africa, Spain (up to 4000 ft.) on sand-hills and plains, also in Portugal, Greece, "Esparto," "Atocha," "Alfa," "Sarte," "Kawil" (Russian), "Fejér Árva" height, about 2½ feet, leaves the beard hairy at base. One of the same species ancient, and was introduced is very common on the arid become very important as a material for import of tons, wh In 1889,

vegetable fibres for paper-mills 385,000 tons, representing a value of over 2,000,000 pounds sterling. Algeria and Tunis export yearly 60,000,000 tons of raw material. But now it is planned to build a large paper-mill in the southern part of Tunis. As 75 per cent. of the English newspapers contains Esparto as material, this matter is of the greatest importance to England. The plant grows in any soil, whatever it may be; even in the scorching heat of the Sahara it maintains itself. Extensive culture of this grass exists in the south of France. It is pulled once a year in the earlier part of summer. *M. Buysman, Hortus Plantarum Diaphoricarum, Middelburg, Holland.*

LAW NOTES.

ASHWORTH v. MATTHEW WELLS.

At the Manchester County Court, Judge Parry gave his decision in the case of Ashworth v. Matthew Wells, which was an action to recover damages for breach of warranty. His Honour, in giving judgment, said the facts of the case were these. In June the plaintiff sold to the defendant an Orchid undeveloped, but warranted by name to the plaintiff as *Cattleya Aclandiae alba*. The Orchid was sold at an open auction, at which many Orchid-growers were present, and fetched £21. Ultimately the Orchid developed into a common purple *Cattleya*, value 7s. 6d. No one had ever grown or seen a *Cattleya Aclandiae alba*, but Orchid-growers were of opinion that such a plant would, if it existed, be worth at least £50, and would probably fetch a much larger sum. The only question in dispute now was what was the measure of damages consequent on the breach of warranty, that the Orchid was "alba." The defendant was ready to repay the money he received for the Orchid, but the plaintiff claimed a sum equal to the price he might have obtained for such an Orchid if it had proved to be "alba." His Honour having quoted the authorities on the case, said that he could find no case in which the failure to make a probable profit had been even claimed, much less allowed, as damages for breach of warranty, and inferentially, the case of *Randall v. Roper* showed that such a claim would not be allowed. It seemed to him that it should be shown that some actual loss had been sustained, and that it was not enough that there should be some possible loss. If the plaintiff found out at once that the plant sold was not as warranted he could have his money returned. If he reasonably expended money in the development of the plant that money ought also to be returned. If he resold the plant with the same warranty, and had to settle a claim against him, that also might be included in his damages. But the failure to make an anticipated profit—in this particular case a highly speculative profit—could not in any opinion be included in the damages naturally consequent on the defendant's breach of warranty. He was further convinced that such anticipated profits could not be recovered as damages for breach of warranty by the judgment in the case of *Peterson v. Ayre*, which was one of the cases considered in *Randall v. Roper*. Under these circumstances he thought the defendant had paid sufficient money into court, and was therefore entitled to judgment with costs. The plaintiff had leave to take the money out of court on payment to defendant of his taxed costs.

SOCIETIES.

ROYAL HORTICULTURAL. SECOND DAY'S CONFERENCE.

(Continued from p. 259.)

THE PROGRESS IN VEGETABLE CULTIVATION DURING QUEEN VICTORIA'S REIGN.

OCTOBER 1.—P. CROWLEY, Esq., presided at the second day's conference, when Mr. MARTIN J. SUTTON, of Reading, read a paper on the above subject:—

In sketching the outline of my paper I felt that I could not do better than take the leading vegetables, enumerating the kinds in cultivation in 1837, and then briefly mention the improvements that have since followed. It is obvious that unless there had been a very marked advance in

the vegetables grown, the progress in cultivation would have been comparatively insignificant. In saying this, I do not for a moment suggest that the gardeners of to-day are not far in advance of those of 1837, but that whatever method of culture might be adopted, no very great advance would be possible without improved vegetables to work upon. Without further introduction I will proceed at once to the all-important subject of the

GARDEN PEAS.

Without hesitation I may say that the progress made during the last sixty years in the improvement of the Garden Peas has been fully commensurate with the position this vegetable occupies, and which may fairly be called the Prince of all Vegetables. I think also I am correct in saying that this proud position has been attained solely through the progress made in its improvement since 1837; an evolution truly marvellous, as I think all will admit when we compare the Peas of 1897 with those of 1837. In the thirties and for many subsequent years the gentleman's garden—as well as the market garden—was dependent upon such varieties as Woodford's, Bedman's Imperial, Scimitar, Early Charlton, Warner's Emperor, Early May, McCormick's Prince Albert, and Early Warwick, the other principal sorts cultivated being Blue Prussian, Bishop's Early Dwarf, and Auvergne. These are Peas which we, with more cultured taste and better varieties at our disposal, now look upon as chiefly suitable for boiling in a dry state. Knight's Tall Green Marrow, a wrinkled Pea, was certainly available at this time, but was not so generally grown as the round-seeded sorts, which an old gardener now living informs me were so hard and dry when cooked that they were known as Buckshot Peas.

During the next decade, a few varieties such as Sangster's No. 1, Champion of England, British Queen, and Hair's Dwarf Mammoth, were added to the list, the first three of which are still largely grown by those who have had no opportunity of testing better sorts; but no considerable interest was awakened until the advent of that popular favourite, "Ne Plus Ultra," which was introduced under three or four names in as many successive seasons. Even at the present day, when testing year by year all the so-called novelties as they appear, we frequently find that still another name has been added to the already long list and which "Ne Plus Ultra" is offered. Of its class, as a tall late Marrow Pea, it is doubtful if any later introduction has ever shown, comparatively, a greater advance on previous kinds.

In passing, it may be of interest to some to know that three of the principal Peas distributed by my house in 1841 were Blue Prussian, Woodford's, and Scimitar, from which we may form a fairly correct idea of the class of Peas then grown by gardeners.

Up to 1857 there had been introduced Daniel O'Rourke and our Early Champion as representing improved types of early Peas; and Glory, Climax, Dickson's Favourite, Prize-taker, and Epps's Lord Raglan.

In 1859 that popular Pea, Veitch's Perfection, was introduced, and in the same year also the first selections of Dr. McLean's seedlings were put on the market by Mr. Charles Turner, including Princess Royal, followed a few years later by Little Gem, and these continued to be favourites for a quarter of a century. This was the commencement of that period of activity which has extended with increased vigour till the present day,—the skilful hand of the hybridiser in conjunction with the keen eye of the expert producing such Peas as Her Majesty's gardener never dreamt of in 1837. Here I may remark that the work of selecting is in no degree less important than that of hybridising. This will be better understood when I explain that a seedling Pea is now generally the result of so much inter-breeding that very many distinct types will often be represented in the ultimate cross. This cross will give a pod containing from six to ten or more seeds, and it is at this point the work of the hybridiser ceases and that of the selector commences, but it is only a commencement.

When sown the following year, these seeds will, in all probability, produce as many distinct seedling Peas, some partaking of the character of the parents and some not; but the difficulty increases when we find that seed saved from each of these plants very frequently varies in each case to such an extent that the greatest patience is required in order to secure any fixed type at all. Let me make my meaning still clearer, if possible.

The first year we start with say, six seeds in the one pod. The second year we have six seedling plants.

The third year we have six rows, short or long, the produce of the six plants of the preceding year, but we also find in each of these six rows Peas of all sorts and types some tall, some dwarf; some early, others later; some large-podded, some small; some pale green in colour, some dark; some curved in the pod, some straight; some pointed at the end, and some square (this difference alone being sufficient in some cases to distinguish two popular garden varieties); and last, but not least, some may be round-seeded, and some wrinkled-seeded. It is clear the selector must commence again, and starting from the most promising plant in each row, endeavour to build up a seedling Pea which will reproduce itself from seed without variation, a task often extending over many years. In scarcely any instance known to me has a seedling Pea been put on the market direct from the hybridiser's hand.

Between 1860 and 1880 many varieties raised by McLean and Laxton were introduced; amongst them being Prince of Wales, Dr. McLean, Omega, William I., and William Hurst, all of which are more or less popular at the present day. During the same period, the first results attained by the

veteran William Culverwell—whose excellent work deserves grateful recognition from all who value Marrowfat Peas—came to light in Telegraph, Telephone, Stratagem, and Pride of the Market, which varieties were introduced by Messrs. Carter. By this time, Henry Eckford was endeavouring, and with considerable success, to infuse the blood of Ne Plus Ultra into a dwarf race of Peas. From various sources appeared during the next few years Autocrat, Duke of Albany (which is certainly one of the most popular Peas of the present day), Sharpe's Queen, Webb's Wordsley Wonder, and others. In 1881 my house introduced American Wonder, which is still more extensively grown than any other early dwarf wrinkled Pea.

I should have preferred on this occasion to have made an allusion to the work of my firm in connection with the Peas, but I think all present will agree with me that no sketch would be complete without referring to the first early wrinkled marrowfat sorts which have been introduced during the past few years, and in the selection of which I have personally been so much interested. I allude especially to My Queen, Al, Empress of India, Seeding, Excelsior, and Forcing, which have attracted so much attention at recent Temple Shows.

Our aim has been to replace the small, hard, round-seeded sorts, upon which the public had been obliged to depend so much for their first supply, with Peas of dwarf growth, but equally as early, and producing pods as large as Telephone, Duke of Albany, and Peas of that class, containing large wrinkled Peas of Marrowfat flavour, and we have succeeded beyond our most sanguine expectations. In Peas of a later class we have introduced other popular kinds, such as Royal Jubilee, Perfection, Windsor Castle, Exhibition Magnum Bonum, Late Queen, and others. The progress with which all these new Peas have been sought after as soon as they have been tried, attests their value, and it is personally gratifying to me to know that Her Majesty—in whose honour we are met to-day—allowed the collection of Peas staged at the Temple Show in 1896 to be placed in the Entrance Hall at Windsor Castle for her personal examination, and that some of the Peas appeared the same evening upon the Royal table. Mr. Thomas perhaps will also allow me to mention that this year Her Majesty was so pleased with the Peas he had grown at Windsor that she telegraphed for a supply to be sent daily by post to Balmoral; and that in June last the Empress Frederick wished seed sent at once to the gardens at Friedrichshof, in order to have Marrowfat Peas in the autumn.

During recent years the list of good Peas has also been added to by such excellent sorts as Daisy, Veitch's Maincrop, Alderman, Laxton's Gradus, and many others.

It may be as well to remark here that the improvement in Peas, as well as other vegetables, has doubtless received considerable impetus from the keen competition upon the exhibition table—a hobby which our older gardening friends seldom if ever indulged in. This competition has likewise had a very marked effect upon the cultivation of Peas and other vegetables; so that, with the fine types now procurable, and the improved systems adopted by growers, results are obtained which are really marvellous.

Before leaving this section, reference must be made to the careful work done in the Chiswick Gardens in making trials of Peas for many years past. The value of these trials, great as it is, would be considerably enhanced did circumstances rendered it possible to grow a larger number of older sorts alongside the new varieties for the sake of comparison. I may mention that in order to make our Peas trials comprehensive enough to determine the value of new seedlings, and to fully test the older varieties offered, &c., it is necessary to sow from 600 to 700 rows annually.

BROAD BEANS.

In the early days of the Queen's reign, lovers of this vegetable were relatively better off than those who preferred Peas, and there already existed such kinds as Marston Dwarf Fan, Early Longpod, and the White and Green Windsor. These have of course been greatly improved upon, but they all remain in use, though it is somewhat surprising that the Marston should be grown at the present time, as in every point it is surpassed by other greatly superior types.

The fact, however, that Beans in use sixty years ago are still grown seems to show that the advance has been less rapid than in the case of many other vegetables. The improvement that has been made is almost entirely the result of selection, although the crossing of Seville Longpod and White Windsor has produced a variety sent out by my house as Giant Windsor, which, as its name implies, is a much larger type of the Windsor section than previously existed.

During the fifties the Seville and the Aquadulce Longpod (very similar sorts) were introduced from the Continent, and on account of their earliness and length of pod have been and still are largely grown, although the constitution of the plant is not nearly so vigorous as our English sorts.

Beck's Green Gem, a sport from the Dwarf White Fan, was introduced in 1848, and some years afterwards the market gardeners in the neighbourhood of Harlington, Middlesex, set to work to improve the Windsor by selection, and as a result of their efforts we have the Harlington White and Green Windsons.

Painstaking selection has done much in the improvement of the Longpod section, the several strains known as Exhibition being fine and profitable types, the best selection of which both white and green-seeded sometimes contain as many as eight or nine beans in a pod, contrasting most favourably with the two or three beans found in the pods of the older kinds. The Broad Bean is not only greatly prized

in private gardens, but is also an important article of food with the poorer classes, and the efforts made to increase its productiveness have been duly appreciated by all classes of society.

DWARF FRENCH OR KIDNEY BEANS.

There were several sorts in use when the Queen ascended the throne, but the difference chiefly lay in the colour of the seed, a feature of little importance except to those who keep a collection of these diversely-coloured and pretty seeds. In fact, they were in the main named after the colour of or markings on the seeds; to wit, the Zebra, Light and Dark Dun, Red and Purple Spotted, Negro, &c., the chief exception being Fulmer's Forcing, which was also in use in 1837. The scope for improvement is limited to size of pod, earliness, and productiveness, and in the former respect, Canadian Wonder, as soon as introduced by us, became very popular; while Ne Plus Ultra, an introduction of more recent date, fairly lays claim to being a marked advance over most sorts for earliness, and also productiveness. Besides these, such excellent varieties as Triumph, White-seed, Forcing, Green Gem, Monster Negro, have appeared, and undoubtedly it may be said that they have come to stay. It was thought that the crossing of this section with the Scarlet Runner might produce useful results; but although many hybrids combining the broad massive pods of the Scarlet Runner, with the habit of the Dwarf Bean, are in the hands of one or two experts, little, if any, advance upon such favourites as Canadian Wonder and Ne Plus Ultra has been made.

CLIMBING FRENCH BEANS.

One of the most notable improvements made in vegetables during Her Majesty's reign has been the creation of an entirely new race of French or Kidney Beans, with a climbing habit of growth. There are several distinct types before the public, differing essentially in the size and colour of the seed, shape and size of pod, and in earliness also. Notable amongst these are our Tender and True and Veitch's Climbing, both attaining a height of 4 to 7 feet according to cultivation; and more recently introduced is our own Excelsior—a Bean combining the delicacy and tenderness of the Canadian Wonder with the vigorous growth of the Scarlet Runner.

RUNNER BEANS

Were represented sixty years ago by the old Scarlet, the Painted Lady, and the Large White, and although one or two sorts of recent introduction are the result of artificial crossing, the majority of the improved types have been attained by selection. But even in some of these cases, it is quite reasonable to suggest that they are natural crosses resulting from inoculation. Scarlet Runners producing pods 12 inches in length would have caused almost as great surprise amongst the gardening fraternity of 1837 as did the advent of the first motor-car in the streets of London. That greater length will yet be attained, I have no doubt, and with it an improvement in quality on some of the existing large-podded kinds. The homely Scarlet Runner which Tradescant cultivated in his garden at Lambeth in the seventeenth century for the sake of its flowers can now, in its improved form, boast of an almost unlimited number of attractive names—each chosen to indicate a type of greater size or length than any previously quoted.

(To be continued.)

OCTOBER 12.—The ordinary fortnightly meeting of this society at the Drill Hall on Tuesday last was remarkably well attended, and the Hall was well filled with exhibits. The most conspicuous feature was that of the perennial Asters, of which there were many good exhibits from the trade and from amateurs. Of Dahlias there was none, but a few Chrysanthemums took the place of these. Orchids were present in considerable quantity. Although the Crystal Palace fruit display occurred so recently, there was plenty of good fruit staged on this occasion, and a Gold Medal was awarded to a collection of Apples and Pears shown by Mr. Woodward, gardener to ROBERT LEITCH, Esq., of Middleton, the only Gold Medal that has been obtained by an amateur for an exhibition of fruit for several years past.

Floral Committee.

Present: Geo. Paul, Esq., chairman; and Messrs. H. B. May, Geo. Stevens, D. B. Crane, J. F. McLeod, Jas. Huison, Thos. Peed, C. J. Salter, J. D. Paw's, Chas. Jeffries, Herbert J. Veitch, J. W. Barr, Jas. Walker, J. T. Bennett-Poole, C. E. Pearson, J. Fraser, Ed. Beckett, R. M. Hog, H. Turner, C. T. Drury, and Ed. Mawley.

Messrs. PAUL & SOY, Cheshunt, had an exhibit composed of Rose-trees in pots, a considerable number of cut flowers, an abundance of hardy flowers, consisting chiefly of perennial Asters and a few herbaceous Phloxes, Pernettyas in several varieties, and Cotoneaster horizontalis in berry were also noticed (Silver-gilt Banksian Medal).

A large exhibit of perennial Asters was one from Mr. F. Beckett, gr. to Lord ALDENHAM, Aldenham House, E. Herts. There were more than eighty large bunches, each of them cut with long stems, and exhibited finely. A. Novi Belgii, varicolor, diffusus, Amellus, polyphyllus, cordifolius, sagittifolius, umbellatus, paniculatus, acris, ericoides, laevis; and numerous varieties of most of these were shown, but the varieties were so exceedingly plentiful, that we have not space even to make a selection. The exhibit, however, was worthy the study of all who desire an abundance of blooms from the open in October. The brightest-coloured variety in

the collection was A. N. B. Orion, a decided and bright pink, the yellow disc being especially bright also (Silver-gilt Banksian Medal).

Mr. W. POTTER, Cam'len Nurseries, Cranbrook, Kent staged a small collection of perennial Asters, in which was included the rubra variety of Aster Amellus. This variety is needed in every collection, as these Asters offer comparatively little of such colour.

Chrysanthemums shown as cut blooms by Mr. Geo. Wythes, gr. to Lord PEACOCK, Syon House, Brentford, were very good. The group was composed of bunches of three good blooms of large flowered varieties, and plants of Adiantum cuneatum were interspersed betwixt them (Silver Flora Medal).

Mr. ROBERT OWEN, Middenhead, showed about two dozen large flowered Chrysanthemums and sprays of some of the newer varieties of Cannas.

That excellent winter-flowering Begonia Gloire de Lorraine, was shown by Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, and Messrs. J. PEAR & SONS, Rouppell Park, Norwood. The groups of plants from Mr. MAY presented the variety in its best possible condition, as serviceable plants in 5-inch pots, each abundantly flowered, and perfect specimens (Silver Flora Medal). Messrs. PEAR'S plants were smaller, some of them in 3-inch pots, but they bore numerous flowers.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, Chelsea, showed a cut a dozen plants of Vitis Colquhouni that has been described many times in these columns, and some plants of Vitis vulpina purpurea bearing very much smaller foliage, coloured intensely purple. Crataegus orientalis in fruit was shown as sprays. The exhibit also included several plants in flower of Caryopteris mastacanthus (Gardeners' Chronicle, vol. xxi., 1884, p. 149). Messrs. VEITCH had a group of plants of their Javanica jasminiflorum hybrid Rhododendrons, all the flowers being very attractive. The same firm obtained an Award of Merit for a very pretty variegated Veronica named Silver Star, and also exhibited a fine large plant of Divallia Cheloni, plants of Cornus sanguinea atrosanguinea with darker coloured leaves than the type; a specimen of Cedrus Deodara aurea, and several plants of Nandina domestica, a pretty plant with compound red leaves (Award of Merit).

An exhibit of perennial Asters by Messrs. JAMES VEITCH & SONS differed from the rest, by the fact that the plants had recently been lifted from the open ground and put into pots. It was therefore possible to see the habits presented by the entire plants, and the circumstance further showed how suitable are perennial Asters for lifting, to be used as decorative plants indoors. The group included about sixty plants in thirty varieties, which had been chosen to represent distinct types (Silver-gilt Banksian Medal).

Crotons were exhibited by Messrs. B. S. WILLIAMS & SON, Upper Holloway, London, who had about fifty plants of moderate height arranged upon one of the tables (Silver Flora Medal).

Ten Roses were shown very tastefully by Mr. GEO. FAIRCK, of the Oxford Nurseries (Silver Banksian Medal).

A group of berried plants from Messrs. W. CURNISH & SON, Highgate, London, N., included a lot of plants of Crataegus Pyracantha Lelandi, Orange trees in fruit; and a band of plants of Skimmia japonica encircling the other plants was effective.

SIR TREVOR LAWRENCE, Bart., Burford, Dorset (gr., Mr. Bain), exhibited a group of a dozen plants of tuberous Begonias with fringed flowers, similar to the one figured in the Gardeners' Chronicle, p. 63 in present volume. An Award of Merit was recommended to the strain.

A hybrid Sarraacenia was shown by Mr. J. T. BENNETT-POLE, obtained from a cross between S. fissa and S. purpurea, and raised at the Glasnevin Botanic Garden.

Mr. H. DEVERALL, of the Banbury Nurseries, staged a group of perennial Aster flowers, and several varieties of Holenium and Rudbeckia. The Asters included A. varicolor, a very dwarf growing plant, with small but pretty flowers. A. acris, W. Bowman, a new British var. of high colour; and one called Madonna, an improvement on Harpur Cress; besides the pretty laevigatus, diffusus, &c.; Chrysanthemum uliginosum with its large white flowers was also included.

Mr. HARRIS BOWDEN Hill House, Chippingham (gr. Mr. J. Penton), exhibited sixteen bunches of Violet Tricolor.

Mr. W. BULL, 516 King's Road, Chelsea, showed a few plants of the new Maranta picta, with leaves about 9 inches long and 3 inches wide, each leaf light pea-green and dark velvety-green in colour, and the plants compact in habit (Award of Merit).

Mr. EMPSON, gr. to Mrs. WINGFIELD, Amphill House, Amphill, showed half-a-dozen plants of a good decorative Chrysanthemum with bluish coloured flowers, and named Mrs. Wingfield (Award of Merit).

Mr. W. WELLS, Earswood Nurseries, Rehill, Surrey, showed several new varieties of Chrysanthemums as plants.

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, exhibited about two dozen and a half of Chrysanthemum blooms, including several well-known varieties. An Award of Merit was recommended to the Chrysanthemum Madame G. Bruant, a Japanese variety of much merit, flowers very long, white towards base, becoming light purple towards end, shown by Messrs. J. R. PEARSON & SONS, Chilwell, Nottingham.

Messrs. HAWKINS & BENNETT, Twickenham, exhibited a group of zonal Pelargonium Duke of Fife, a semi double dark scarlet flower produced on strong long stems.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), B. Courtauld, W. H. Protheroe, W. Cobb, E. Hill, W. H. Young, F. J. Thorne, H. Williams, H. J. Chapman, De B. Crawshaw, T. W. Boud, H. M. Pollett, and T. B. Haywood.

Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver-gilt Flora Medal for a magnificent group of rare and beautiful Orchids, including many new and rare hybrids, among which were the fine Sibrallia x roseo-macrantha, a plant which is of dwarf habit, and possesses purplish rose-coloured flowers of large size, whose sepals and petals have a white margin; Lælio-Cattleya x Lucilia (L.C. elegans x C. Dowiana), with pale rose-tinted sepals and petals, lip of a rich purple-crimson hue, and a yellow disc; the new Dendrobium taurinum ambolense, with growths imported, some 6 feet in length, and carrying ascending spikes of numerous flowers, in form resembling those of the type, but of a yellow colour on the reverse side of the flower, the face being reddish-brown (Botanical Certificate). Other fine hybrids represented were the Lælio-Epiphronitis x Veitchi, Lælio-Cattleya x Pallas, L.C. x Nysa, and its varieties superba and purpurea; L.C. x Eudora, L.C. x Novelty, Cattleya x Caloria, C. x Eros, Cyrtopodium x Drurio-Lawrenceana, C. x Arete, C. x Arthurianum, C. x Genanthum superbum, &c.

The rear plants in the group consisted of Oncidium phytostichum, of very slender growth; O. divaricatum, O. Forbesii, O. pretextum, O. varicosum, O. tigrinum; fine specimens of the singular-looking Dendrobium stratosi; D. Pinnatifidum Schrodorianum, Odontoglossum Uro-Skinneri splendens; the white-lipped O. Buteonense album; O. grande, handsome varieties of Cattleya labiata; Vanda Sanderiana, Angrecom Challuianum, and A. citratum; the orange-carlet-coloured Dendrobium subulatum, Cyrtopodium insignis Sanderi, and the true O. purpuratum; Compactia coccinea, Lonicera paniculata, and other rare species of small growth. An example of Coelogyne Veitchi bearing six spikes, varying from thirty to thirty five of its white flowers on each spike, was an attractive object.

R. I. MEASURES, Esq., Cambridge Lodge, Camberwell (gr. Mr. H. J. Chapman), was awarded a Silver Flora Medal for an effective group that consisted principally of forms of Cattleya labiata, and included a plant of the remarkable C. labiata "R. I. Measures," which has charming white flowers, with a delicate pink veining on the front of the lip; Lælio-Cattleya x Sallieri (L. purpurea var. x C. Loddigiana) with several very pretty light rose flowers on a spike; fine examples of Lælia pumila, a grand specimen of Dendrobium aureum; the richly-coloured Cyrtopodium x Chapman; and other hybrid Cyrtopodiums, the most remarkable of which was C. x callosa Mastersianum, with singularly-tinted, wax-like flowers, formed part of the exhibit.

SIR TREVOR LAWRENCE, Bart., Burford, Dorset (gr. Mr. W. H. White), showed a fine specimen of Cryptophranthon Dyanus, bearing a number of its singular-looking flowers, which resemble a hawk's head (Botanical Certificate).

Messrs. HUGH LOW & CO. Clapton, were awarded a Silver Flora Medal for an effective group, in which were fine varieties of Cattleya labiata, arranged with C. Loddigiana, C. Dowiana, good varieties of Lælia pumila, among which was L. pumila, "Low's var.," with blue-purple-tinted flower, bearing a great resemblance to the Gattion Park variety, certificated at the last meeting, received an Award of Merit. The group also contained plants of the fine yellow-coloured Cyrtopodium insignis Laura Kimball, and C. insignis W. Mittle Dow; also the handsome C. x Mrs. Tautz, C. x William Lloyd, and other hybrids; fine examples of Odontoglossum grande, O. crispum, Dendrobium Phalenopsis violaceum, Oncidium oithorhynchum album, O. Lanceanum, &c.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, staged a pretty group, which secured a Silver Banksian Medal, in which were remarked several Cattleya labiata in variety, including gloriosa and purpurea; Cyrtopodium x giganteum, Williams' variety (Sallieri aureum x Harrisonianum superbum), C. x Pictorianum, Williams' var., C. x onanthum, O. Chamberlainianum, Paetores Lehmanni, Saccolabium Blumei, Odontoglossum cristatum, O. Wallisii purum, O. constrictum, Dendrobium bigibbum, D. Phalenopsis, Cochlidia vulcanica, &c.

Messrs. F. SANDER & CO., St. Albans, exhibited several beautiful varieties of Cattleya labiata, including a white form with purple blotch on the lip; C. x Mrs. (labiata x Lawrenceana), Bulbophyllum Godeffmanum, Cattleya Bowringiana, &c.

HIS GRACE THE DUKE OF WESTMINSTER, Eaton Hall, Chester (gr. Mr. N. F. Barnes), sent an attractive, dark-coloured variety of Dendrobium Phalenopsis Schrodorianum.

Mr. T. ROCHFORD, Turnford Hall Nurseries, showed a plant of the remarkable Vanda cœrulea Rochfordiana, a variety possessing clear white flowers, and a lip of a soft pink tint (Award of Merit).

H. T. PITT, Esq., Roslyn, Stamford Hill, showed Odontoglossum grande Pittianum, a fine clear yellow form, in which the brown bars seen in the type are suppressed (Award of Merit).

Mr. J. W. MOORE, Eldon Place Nursery, Bradford, exhibited Vanda x Moorei, a natural hybrid between V. Kimballiana and V. cœrulea, between which species it is intermediate in character. The flowers were larger than V. Kimballiana, and the lip longer and narrower; the sepals and petals are of a lavender-blue colour; the side lobes of the lip brown, and the blade purple-coloured (Award of Merit).

WALTER COBB, Esq., Dulcote, Tunbridge Wells (gr., Mr. J. Howes), sent *Zygopetalum foristanum* (*Lindleya* v. t. 93), a pretty and floriferous species for which an Award of Merit was made; also *Cypripedium Charlesworthii*, Dulcote variety, in which the upper sepal is variegated with white and rose.

C. L. N. INGRAM, Esq., Elstead Hall, Godalming (gr., Mr. T. W. Bond), again showed the pretty *Cattleya* × *Eclipse* (maxima × Skinneri), for which he had previously received an Award of Merit; the singular-looking *Laelio-Cattleya* × *Firefly* (*L. Dormaniana* × *C. Bowringiana*), with dull rose flowers and elongated lip; *L.-C.* × *illustris* (*L. Dayana* × *C. Warscewiczii*), which resembled *L.-C.* × *Epicasta*; and *L.-C.* × *olorata* (*C. Eldorado* × *L. xanthina*), a neat yellowish-white flower, with markings of rose upon the lip.

J. BRADSHAW, Esq., The Grange, Southgate (gr., Mr. H. Whiffen), showed a fine plant of *Cattleya* × *Mantini nobilior* (*Bowringiana* × *Dowiana aurea*).

J. W. TEMPLE, Esq., Leyswood, Groombridge (gr., Mr. C. Bristow), showed *Laelio-Cattleya* × *Templaris*, of unrecorded parentage, which much resembled *Cattleya* × *Minucia* (*Lodigesi* × *Warscewiczii*). H. J. HARRIS, Esq., J.P., Bowden Hill House, Chippenham (gr., Mr. J. Penton), sent a very fine form of *Odontoglossum grande*. F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent *Nanodes Mantini* (Botanical Certificate) and *Maxillaria punctatostriata*.

Fruit Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. Hugo M. Müller of Vienna, Geo. Bunyard, Jos. Cheal, G. W. Cummins, W. Pope, A. H. Pearson, A. F. Barron, Alex. Dean, J. W. Bates, G. Woodward, James H. Veitch, J. Willard, J. Smith, Geo. Wythes, F. Q. Lane, G. Reynolds, W. J. Eapson, R. Fife, and T. J. Saltmarsh.

The Gold Medal of the Society was awarded to Mr. G. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, Maidstone, for a magnificent display (100 dishes) of Pears and Apples. When we say that the fruits were as fine examples as it is possible to grow in this country, we are saying no more than is undeniable. Many of the varieties were shown by the exhibitor at the Royal Horticultural Society's show, held at the Crystal Palace at the beginning of the month.

Mr. A. H. RICKWOOD, gr. to Dowager Lady FREAKER, Fulwell Park, Twickenham, showed ninety-six dishes of Apples and Pears of average merit, securing a Silver Banksian Medal. Some few of the newer varieties of Pears and Apples were noted in this collection, but old varieties formed the greater proportion.

The second-best collection of Apples and Pears at the meeting was that shown by Mr. A. Offer, gr. to J. WARREN, Esq., Handcross Park, Crawley; this comprised many fine examples of Pears, but was weak in Apples, as compared with the Barham Court collection, although colour, as is usual in Sussex Apples, was brighter than was observed in the Kent fruit. An award of a Silver Knightian Medal was made.

A collection of bottled fruits came from T. GRAHAM POWELL, Esq., Horticultural College, Swanley. There were included two or three varieties of Cherries; Gooseberries, Pears, and black Currants. Ordinary bottles, with sealing-waxed corks, were used.

In the competition for flavour in Pears, the 1st prize was given to Thomson's Pear, shown by Colonel BRYMER, Islington House, Dorset (gr., Mr. J. Powell); 2nd prize to Rev. H. GOLDING PALMER, Holm Park, Berks (gr., Mr. Osborne), for Marie Louise.

In Apples, Mr. G. WOODWARD, gr., Barham Court, was 1st, with Cox's Orange Pippin; and Colonel BAYMER was 2nd, with Ribston Pippin.

Messrs. G. BUNYARD & Co., Maidstone, received an Award of Merit for Apple, Jas. Grieve, an early, pleasantly flavoured dessert fruit.

JOHN ESTER, Esq., Wakefield, showed a small collection of Apples, chiefly culinary varieties, and of fair quality, obtaining a Silver Banksian Medal; fifteen dishes in all.

Mr. THOMAS ROBERTSON, gr., Elsfeld, Notts, showed Runner Beans of large size, and almost straight.

Messrs. A. W. YOUNG & Co., nurserymen, Stevenage, showed a pretty collection of ornamental Gourds in perhaps a score of different species, and apparently in well ripened condition. These are interesting plants wherewith to cover rough fences in gardens, and are too seldom grown or shown.

Messrs. J. CARTER & Co., 237 and 239, High Holborn, showed a representative collection of agricultural and culinary varieties of Cabbage, and among them we remarked good examples of the Magdeburg, a drum-head variety suitable for making sauerkraut or feeding cattle; Early Heartwell, extra good; Red Utrecht, an early hearting sort; Winnigstadt, an old conical-shaped Cabbage of nice flavour; Hardy Green Colewort, one of the best for general planting for winter use; All Seasons, a fine-looking Drum-head; Wheeler's Imperial, still one of the best when true; Rosette Colewort, good for close planting in gardens, and very hardy; Jersey Wakefield; Garfield Red, an early hearting small variety; Nonpareil, a miniature Drum-head; Mammoth Beef-heart, the old well-known St. John's Day, and others.

Lecture.

SOME CURIOSITIES IN ORCHID BREEDING.

This was the title of a very long and exhaustive lecture delivered in the afternoon by Mr. C. C. HURST. In commencing the subject, Mr. Hurst said that to better understand certain abnormal results attending the crossing of Orchids, it would be well first to study the normal effects. Hybrids of the first generation, that is between two distinct species, were

generally exactly intermediate in character between the parents. Such an instance was *Cypripedium Leeanum* ×, which was intermediate between *C. insignis* and *C. Spicerianum*. From such a cross the whole of the seedlings would be *C. Leeanum* ×, and as often as the cross was effected this would be the result, whether or not *Spicerianum* or *insignis* were used as the pollen-parent. There would be varieties of *Leeanum* ×, but these would not differ from each other in greater degree than varieties of a true species. It was very necessary then that any hybrids of a certain cross should be known by one specific name only, and to distinguish certain forms from others, varietal names only should be used. It was also found that the varieties occurring in such a cross were limited in number, if neither of the parents had many varietal forms. Of *C. Leeanum* × there were innumerable varieties, but so there were of *C. insignis*, one of its parents. The result of a cross would also depend upon the varieties used of the parent species. *C. Spicerianum* crossed with *C. insignis* Sanders produced a well-known variety of *C. Leeanum*.

C. insignis Chantini crossed with itself produced a lot of varieties, proving that the parent had not been fixed for any length of time. In speaking of the "reverse" cross, it was admitted that sometimes the varieties differed from those obtained from the original cross; but, as proved by Messrs. Veitch, in the case of *Cypripedium Sedeni*, they are not intrinsically different. If the seedlings were different, then the varieties of the species used for the parents were not the same; or if the same varieties had been used, then they have had a "past."

The lecturer proceeded to describe the whole process of pollination and fertilisation, and referred to the study and observations of Mr. Harry Veitch into the pollination and fertilisation of *Cattleya Mossii*, the results of which were contributed in a paper read before the Linnean Society about ten years ago. The process of fertilisation was described in order to show why a cross from distinct species should be intermediate between the two parents. The subject of nuclear sub-division and of male and female organs, and the confluence of the two, which results in the destruction of exactly one-half of the nuclei possessed by either, and therefore the union of an equal number of each, is a decidedly abstruse subject, but one the study of which by experts may be expected to throw light on many of the phenomena of hybridisation and sporting.

Mr. Hurst next proceeded to cite eleven cases where the seedlings from a cross had resembled one parent only, and discussed if such could possibly be true hybrids. He thought they were not, but had been fertilised by their own pollen, or fertilisation had occurred without any pollen reaching the ovule at all. The above was referred to as one of many curiosities of hybrids of first crosses. Owing to want of time, Mr. Hurst was obliged to treat a good deal of the paper "As read." Referring to *Odontoglossum* hybrid seedlings, the result of these in some cases had been to determine the parents of natural hybrids, already in cultivation. The influence of foreign pollen was considered, and in regard to the ripening of seed pods, it was said that the nearer to midsummer the cross was effected, the sooner did the pod ripen. Mr. Hurst went on to consider generic hybrids and certain curiosities attending such crosses. Twenty-six different genera had been united together by fertilisation, and a diagram was shown indicating in what manner and to what degree this had been done. The fertility of hybrids between species, and other aspects of this question were considered. The sterility of hybrids was attributed to the male element in the hybridising. The paper dealt with other matters, and was a most elaborate one, which can be better studied when it has appeared in the society's *Journal*. Mr. H. J. Veitch occupied the chair, and after the reading of the paper, Mr. R. A. Rolfe, of Kew, discussed many of the statements that had been given, from some of which he differed.

BEDDINGTON AND CARSHALTON HORTICULTURAL.

OCTOBER 5. — The annual general meeting was held on the above date at Carshalton. From the report of the committee it was shown that the society's exhibition was this season a moderate success.

The total number of entries for competition was equal to that in previous years, and there were many honorary exhibits of high quality. Owing to the Diamond Jubilee celebrations, and the consequent appeal for subscriptions for other causes, there was, as the committee expected, a slight falling off in the subscriptions and donations to the society during the year, but notwithstanding this there was a balance in hand of over £53. A conference was held on gardening, at which Mr. A. H. SMEE, C.C., presided. It was a decided success, and a large audience manifested the closest interest in the addresses.

The balance-sheet showed that the year was commenced with a balance in hand of £35 18s. 10d., subscriptions, donations, and special prizes amounted to £138 10s. 6d., the various receipts in connection with the show on Bank Holiday amounted to £158 17s. 3d., and the Sports Committee returned £2 2s. 2d., making the total receipts £335 14s. 9d. There was paid in prizes £97 15s. 6d., and a sum of £30 18s. was voted to the Sports Committee, the total expenses of the year amounting to £282 7s. 3d., leaving a balance of £53 7s. 6d.

Mr. H. Cosmo Bonsor was elected President, and Mr. S. Stewart a Vice-President of the Society.

Mr. G. W. CUMMINS was renominated for secretary, but stated that as he had given up his appointment as gardener at the Grange, it was with the greatest regret he had to decline the honour and resign the position he had held from the commencement of the society.

The chairman and others spoke of the able way in which the duties of the secretary had been conducted; and a vote of thanks was heartily passed, as was also a resolution that an honorarium of ten guineas be awarded Mr. Cummins in recognition of his services.

Mr. Cummins, in returning thanks, said that as long as he remained in the district, the Horticultural Society should have his hearty support.

Mr. W. T. TOOGOOD (late assistant secretary) was then elected secretary, and Mr. C. F. F. HUTCHINGS assistant secretary.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 7. — Present: G. Shorland-Ball, Esq., in the chair, along with Messrs. Jas. Backhouse, Wm. Bolton, R. Johnston, H. Greenwood, Captain Schofield, Wm. A. Gent, and Jas. Anderson.

This was by far the best collection of good showy Orchids, combining some sterling varieties, that has yet passed before the Orchid Committee of the North of England.

The exhibit of *Dendrobium* by Mr. R. Johnson, gr. to THOS. STATTER, Esq., Stand Hall, Whitefield, covered with at least 2000 blooms, worthily gained the award of a Silver Medal. The same honour was granted to GEO. SHORLAND-BALL, Esq., of Ashford, Wiltshire (gr., Mr. A. Hay), who had a *Cypripedium insignis* Harefield Hall var. (F. C. C.), flower very large in all its parts, and of clean, clear captivating colour. Other honours fell to the same exhibitor for *Cypripedium Memoria Mensii*, still the finest red *Leeanum* we have, and to *C. tonsum giganteum* (Award of Merit).

Alderman BOLTON, Wilderspool (Mr. Cain, gr.), showed a grand lot of plants in fine bloom; and his *Cattleya* resembling *C. Hardiana*, and named *C. Massaiana Boltoniana*, with four magnificent flowers, an outcome of natural hybridisation, will long be remembered, the crimson on the lip, and the cerise tint of the segments of the flower, making it most attractive; the committee awarded it a First-class Certificate. His varieties of *Cattleya Harrisoniana* were choice and varied in colour. These were hybrids, either natural or artificial, which showed how interesting cross-breeding becomes in capable hands. These three varieties received the award of a Silver Medal each, in consideration of their beauty and the high degree of culture exhibited.

Next in importance to the above was the collection from HUGH LOW & Co., London, and nothing was better than the *Cattleya aurea*, Mrs. Gratrix, which obtained a First-class Certificate. Along with this plant was *Cypripedium insignis*, Nellie Don (Award of Merit) *Cattleya* × *Nyssa splendens* (Award of Merit), had the handsomest lip we have yet seen.

By far the finest-grown plant on exhibit was the *Vanda cœrulea* from JAMES BACKHOUSE & SON, York. The plant had nearly one hundred open flowers upon it. An Award of Merit and Cultural Commendation were given.

JOHN LEEMAN, Esq., West Bank House, Heaton Mersey (Mr. Edge, gr.), had several good *Cypripediums*; and a form of *Cattleya Hardiana*, which the committee asked to be shown again.

O. O. WRIGHT, Esq., Bury, and several other gentlemen were awarded thanks of the Society.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

OCTOBER 12. — The annual dinner of this society was held on Tuesday evening last at the Holborn Restaurant. Mr. H. B. MAY, of the Edmonton Nurseries, presided over what was probably a "record" attendance. On such a busy day as Tuesday proved to be, such an attendance was a testimony to the very lively interest taken in the welfare of the society; an interest justified by the praiseworthy aims of the institution, existing as it does for the purposes of assisting gardeners in sickness and old age.

The chair was well supported by a goodly number of influential representative horticulturists. When the toast of Her Majesty the Queen had been received with musical honours, the chairman rose to propose that of the United Horticultural Benefit and Provident Society, which was accompanied by a short but sensible speech.

The Chairman remarked that had those present been unassociated with gardening, it might have been necessary to speak of the difficulties attending a gardener's career, the uncertainty of employment, the ills to which they are subject from climatic changes, and the inability which too frequently precludes them from making provision for that time of which Longfellow sings:—

"The common fate of all,
Into each life some rain must fall;
Some days must be dark and dreary."

In the presence of gardeners this, however, was unnecessary. The society had for its motto, "Unity is strength," but it was also founded upon the basis of self-help. It was democratic in its constitution, and the substantial progress made was a brilliant testimony of its appreciation by those for whose benefit it was established. It was founded by gardeners, is conducted by gardeners, and was

for the welfare of gardeners; and the advantages it offers its members, especially its aged members, was most liberal—a happy combination of a benefit society and a savings-bank. The rates of contribution and benefits were then given, and reference made to the rule of the society to keep the funds of lapsed members until they reach the age of sixty, and then return it to them with compound interest, or, in case of death, it is immediately given to the deceased's nominee. The concluding paragraph in the actuaries' report at the quinquennial valuation in 1896 was read, and from this it became evident that there had been an increase of membership in the time from 191 to 535, the growth of funds from £4,933 to £9,533, and an increase of income from £908 to £1,376.

The Chairman, after expressing his intention to become a honorary member, appealed to others to assist the funds in a similar manner. Alluding to the Benevolent Fund initiated by Mr. N. N. Sherwood, the Chairman justly congratulated the members upon this feature of the Society, that helped convalescent members at a time when help was exceedingly useful.

In reply to this toast, Mr. J. Hudson, Hon. Treasurer to the Society, made several satisfactory statements, including one to the effect that it was expected the Society would invest during the present year £1300, or £100 per month. He spoke of the increased number of members, at the same time inviting more, and basing his plea upon the economical method by which the Society is managed. Incidentally it was said that no committee meeting was held in course. Any member might be present at any meeting he wished. The present membership was 684.

Other toasts included "The Honorary Life Members and Visitors," responded to by Mr. Geo. Bunyard and Mr. B. Wynne, "The Chairman," "Kindred Institutions," a toast that afforded Mr. G. Ingram an opportunity to plead the cause of the "Gardeners' Royal Benevolent Institution." A tribute of praise is deserved for the tasteful manner in which the room and tables were decorated, and the proceedings generally were characterized by enthusiasm.

Mr. Geo. BUNYARD has accepted an invitation to preside on the occasion of the next annual dinner.

NATIONAL CHRYSANTHEMUM.

OCTOBER 12, 13, 14.—The usual October exhibition of Chrysanthemums by this society, being the second held this season, was opened on Tuesday last in the Royal Aquarium, Westminster. In the open classes for twenty-four and for twelve blooms of Japanese flowers, there was much competition, and the quality of the blooms was good, particularly the 1st and 2nd prize collections of twenty-four blooms. Apart from these classes, the competition was only moderate, and in two or three instances there were no entries. Pompons were few and poor, and the exhibition was practically one of Japanese varieties only. The groups of Chrysanthemum-plants were commendable. Table decorations and epergnes of Chrysanthemum blooms made much display.

There were three groups of Chrysanthemums and foliage plants, each upon a space of 73 superficial feet. The 1st prize was won by Mr. NORMAN DAVIS, Framfield Nurseries, Sussex. In this group, the Chrysanthemums were good; and more than that, they were freely interspersed with plants of an ornamental character, the intermixing being effected with much taste. Among the Chrysanthemums, the varieties Louise, Perle Dauphinoise, Mrs. S. W. Palmer, Ethorne Beauty, and Geo. Seward showed best. The 2nd prize went to Mr. Howe, gr. to H. Tate, Esq., Streatham Common, S.W., who also very freely supplemented the Chrysanthemum with choice foliage plants. 3rd, Mr. J. H. WITTY, Nunhead Cemetery.

In the class for twenty-four blooms, Japanese (open), there were seven competitors, and the winning stand of Mr. C. Penfold, gr. to Sir F. Fitzwarren, Bart., Leigh Park, Havant, contained blooms as large in size as many that are usually staged in November. The largest blooms in this case were put in the front row, rather than at the back. It contained no absolutely new varieties, but many of last year's novelties were shown. Thus there were Modesty, Mutual Friend, Mdle. Chenon de Leche, Edith Tabor, Madame Gustave Henry, International, and others. Mr. JAS. AGATE, nurseryman, Havant, took 2nd prize, with smaller but better coloured flowers, than the others. For instance, Mons. Chenon de Leche, Ed. Molyneux, Milano, and Surprise were capital. 3rd, Mr. NORMAN DAVIS, The Vineries, Framfield, Sussex. There were also two extra prizes awarded.

For twelve blooms Japanese, distinct (open), Mr. F. G. Foster, Brockhampton Nurseries, Havant, beat five other competitors, his best blooms being Edith Tabor, Mutual Friend, and Phœbus; 2nd, Mr. R. Jones, gr. to C. A. SMITH-BLYNDEN, Esq., Barford Hill, Warwick; Mr. JAS. AGATE was 3rd. The flowers generally in this class were rather weaker in quality than those in the previous one.

In the amateur's class for twelve blooms of Japanese, distinct, there were two exhibitors, the 1st prize being taken by Mr. R. Gladwell, gr. to SYDNEY SMITH, Esq., Wenden Hall, South Norwood. Mutual Friend, Phœbus, and G. C. Schwabe were the best in a satisfactory dozen blooms. This same exhibitor had 1st prize for six blooms also, beating two other exhibitors. All of these blooms were good. They were Phœbus, Edwin Molyneux, President Borel, Mrs. C. H. Payne, Mutual Friend, and G. C. Schwabe.

The amateur class for twelve blooms in six varieties, was won by Mr. MARTIN SILSBURY, Shanklin, Isle of Wight; and Mr. HENRY LOVE, from Sandown, also in the Isle of Wight, was 2nd. Mr. M. SILSBURY won the class for six blooms, distinct.

The best table of bouquets, wreaths, &c., was adjudged to be one shown from Mr. CHARD'S Establishment, Stoke Newington.

Mr. Jas. Brookes, gr. to W. T. NEWMAN, Esq., Totteridge Park, Herts, won a 1st prize for two vases furnished with Chrysanthemum blooms, for which there were five competitors; and Mr. T. Thillett, gr. to G. ALEXANDER, Esq., Warley Lodge, Brentwood, had the best single vase.

The best three epergnes of Chrysanthemum flowers were those from Mr. D. B. CRANE, Archway Road, Highgate, 2nd, Mr. C. B. COLE, The Vineyard, Feltham. The epergnes from Mr. CRANE were novelties. The glasses at various heights were secured to the top of stiff wires, the other end of the wires being let into a comparatively insignificant-looking stand made of wood. The wires may be taken out, glasses removed, and the whole packed for travelling with little trouble. If a heavier, better stand be substituted, this form of epergne will possess many advantages.

Pompons were represented but badly. The 1st prizes for twelve and for six bunches were taken by Mr. E. F. SUCH, of Maidenhead.

NON-COMPETITIVE EXHIBITS.

The largest non-competitive collection of Chrysanthemum blooms was that from Mr. W. J. GODFREY, Exmouth, who had upwards of ten dozen blooms. A dozen blooms of Viscountess Roger de Chazelles, Japanese yellow, were very fine. Many of the newer varieties were well shown, and a few novelties. Carnation blooms in sprays made part of this exhibit.

Mr. T. S. WARR, Hale Farm Nurseries, Tottenham, furnished a table with Adiantum Ferns, which were studied with Chrysanthemum bloom, Tritoma blooms, Nerine varieties, &c. From Tottenham there was also a group of hardy flowers for the greater part consisting of perennial Asters.

Mr. W. WELLS, Earlswood Nurseries, Redhill, had what would have been a circular group of Chrysanthemum plants, but for four tables at equal distances in the circumference. Upon these were placed cut blooms of Chrysanthemums, of comparative novelties, the blooms being capital in quality for this date in October. The group included a plant bearing three blooms of the new Japanese variety Madame G. Bruant described below. Altogether the exhibit was a showy one, and it obtained a Gold Medal.

Messrs. H. CANNELL & SON, Swanley, had a group of Gladioli in bloom, and a small collection of excellent Chrysanthemum blooms. Amongst the latter we noticed the large yellow Japanese Soleil d'Octobre, Milano, and others were well shown, and the same firm had good Onions and other vegetables.

Mr. E. F. SUCH, nurseryman, Maidenhead, showed bunches of blooms of early-flowering Chrysanthemums cut from the open.

Mr. H. J. JONES had his exhibit arranged upon a table. It consisted of Chrysanthemum blooms of early and late varieties interspersed with Ferns. Zonal Pelargoniums in sprays were also included.

Mr. H. Berwick, Sidmouth Nurseries, Devon, made a display of Apples and Pears, as did also Messrs. S. SPOONER & SONS, Hounslow Nurseries, Middlesex. Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., had a collection of Apples and Pears, in addition to perennial Asters, and other hardy flowers, fibrous-rooted Begonia plants, &c.

AWARDS TO NOVELTIES.

A First-class Certificate of Merit was awarded to Japanese Madame G. Bruant, a large full drooping petalled flower, with a deep suffusion of purple towards the points of the petals. This fine variety was also shown by Mr. WILLIAM WELLS, but his blooms were not so finely developed as those of Messrs. PEARSON & SONS, Chilwell, Nottingham, it being a rule of the National Chrysanthemum Society that the certificate should go to the best blooms. The same award was made to a decorative variety named Ambrose Thomas, from Mr. W. WELLS, having orange thread-like florets, a very free-flowering and attractive October-blooming variety. Several other new varieties were staged, but not sufficiently developed to judge of their actual value.

Obituary.

JESSE KERSEY SHARPLESS.—On September 10, last, there died at Catawissa, in Pennsylvania, U.S.A., in the 81st year of his age, Jesse Kersey Sharpless, an American gardener, and the raiser of the valuable prolific-bearing Strawberry Sharpless.

MR WILLIAM SCOTT.—As we are going to press we hear of the death at Stirling, on the 3rd inst., of Mr. William Scott, Director of the Mauritius Botanic Garden. In our next issue we hope to give some account of his career.

MARKETS.

COVENT GARDEN, OCTOBER 14.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms...	4 0-6 0	Mignonette, per	
Asters, 12 bunches	3 0-6 0	dos. bunches...	2 0-4 0
Bouvardias, per		Myosotis, or Forget-	
bunch...	0 4-0 6	me-Not, 12 bunch	1 6-3 0
Carnations, pr. dos.		Oreochlois:-	
blooms...	0 9-1 6	Cattleya, per 12	
— per doz. bun.	4 0-6 0	blooms...	9 -15 0
Chrysanthemums		Odonatoglossum	
p. dos. blooms	0 6-2 6	crispum, 12 bn.	1 6-3 0
— p. dos. bunches	3 0-6 0	Pelargonium, scar-	
Dahlias, 12 bunches	1 6-4 0	let, per 12 bun.	3 0-4 0
Eucharis, per dozen	2 0-4 0	— per 12 sprays...	0 4-0 6
Gardenias, per doz.		Pyrethrums, per 12	
blooms...	1 0-2 0	bunches...	1 6-2 6
Gladioli, various,		Roses, Tea, per doz.	0 6-1 0
per doz. bunches	6 0-18 0	— yellow (Pearls),	
Lilium Harris, per		per dozen...	1 6-4 0
dos. blooms...	2 0-4 0	— red, per dozen	0 9-1 0
— Lancifolium,		— pink, per doz.	1 6-2 6
per doz. blooms	1 6-2 0	— Safrano, p. doz.	1 0-2 0
Lily of the Valley,		Roses, per dozen	
dozen sprays...	1 0-2 0	bunches...	3 0-6 0
Maidenhair Fern,		Stephanotis, dozen	
per 12 bunches...	4 0-8 0	sprays...	3 0-4 0
Marguerites, per 12		Tuberose, 12 blms.	0 8-0 4
bunches...	2 0-4 0	Violets, 12 bunches	1 6-2 0

ORCHID-BLOOM in variety.

PLANTS IN POT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Evergreen shrubs,	
Aspidistras, per doz.	12 0-30 0	in variety, doz...	6 0-24 0
— specimen, each	5 0-15 0	Ficus elastica each	1 0-7 6
Asters, various, per		Ferns, small, doz...	1 0-2 0
doz...	2 6-5 0	— various, doz.	5 0-12 0
Chrysanthemums,		Foliage plants, doz.	12 0-36 0
p. dos. pots...	5 0-9 0	Fuchsia, per doz...	4 0-6 0
— specimen, or		Heliotropes, dozen	3 0-4 0
large plants, ea.	1 6-2 6	Liliums, various,	
Coleus, per doz...	2 0-4 0	per dozen...	9 0-12 0
Dracenas, each...	1 0-7 6	Marguerites, p. doz.	6 0-9 0
— various, p. doz.	12 0-24 0	Mignonette, p. doz.	4 0-6 0
Erica, various, per		Palma, various, ea.	2 0-10 0
dozen...	9 0-18 0	— specimens, ea.	10 6-84 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples, Dessert, in		Pears, various, per	
variety, p. bush.	6 0-10 0	bushel...	4 0-10 0
— Culinary, in		— small, bush.	2 0-3 0
variety, per		— stewing, per	
bushel...	3 6-6 0	bushel...	2 6-4 0
Blackberries, peck	2 0-2 6	— Californian, B.	
Grapes, Gros Col-		Hardy, p. case,	
mar, per lb...	1 6-2 0	about 4 dozen	9 6-
— 2nd qual., lb.	10-1 0	— B. Clargau,	
— Gros Maroc, lb.	1 0-1 6	per case (8 to 9	
— Alicante, p. lb.	1 0-1 3	dozen)...	10 6-
— 2nd qual., lb.	0 6-0 8	— Glou Mor-	
— Hamburgs,		ceau, per case,	
selected, per lb.	1 0-1 6	about 4 dozen...	9 0-9 9
— 2nd qual., lb.	0 8-0 9	— D. de Co-	
— Muscats, "Can-		mic, p. cas,	
non Hall," p. lb.	2 0-4 0	about 4 dozen	8 0-
— Channellands		Pine-apples, St. Mi-	
per lb. ...	0 6-0 9	chael, cases con-	
— Muscats, se-		taining 6 to 8...	4 6-5 0
lected, per lb...	2 0-2 6	— cases contain-	
— Muscats, 2nd		ing 10 to 12...	1 6-2 0
quality, per lb.	0 9-1 3	Plums, Bullace, p.	
Melons, each...	0 6-1 6	half-bush...	5 0-
Nuts, Cobs, per		— Prune, 4-bush.	8 0-8 6
100 lb. ...	22 6-24 0	Walnuts, shelled,	
Oranges, S. Austral-		p. half-bush...	5 0-6 0
ian, p. case, con-		— double shelled,	
taining 120 fruit	10 0-12 0	per bushel...	2 0-21 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Mushrooms (Indoor)	
per doz...	2 0-2 6	per lb. ...	1 0-1 3
Beans, Scarlet Run-		— (Outdoor), per	
ners, per bushel	2 0-2 6	lb. ...	0 6-0 8
— French, Chan-		Salad, small, per	
nel Islands, lb.	0 9-	dos. punnets...	1 6-
Beetroots, p. bush.	1 6-2 0	Shallots, per lb.	0 2-
Capsicum, Chili, p.		Sprouts, per 4-bush.	1 6-2 0
100...	1 6-	Tomatoes, selected,	
Cauliflowers, dozen	2 0-	per doz. lb. ...	4 0-4 6
Cucumbers, home-		— Medium, doz.	3 0-3 6
grown, select.,		— Seconds, do.	1 0-1 6
per doz...	2 0-3 0	— Channel Is-	
— 2nds, per dozen	0 9-1 0	lands, per 12 lb.	2 6-3 0
Garlic, per lb.	0 2-		

POTATOS.

We are now getting moderate supplies from Holland and Belgium, which tend to check any upward movement in second class Potatoes. Present quotations as follows:—Hebrons and Snowdrops, 75s. to 100s.; Saxons 70s. to 85s.; Maincrop, 75s. to 90s.; Giants and Magnums, 65s. to 75s.; Blacklands, 60s. to 70s.; Belgium Kidneys, 3s. 3d.; Dutch Rounds, 3s. 3d. to 3s. 6d. per bag of fifty kilos. John Bath, 82 and 84, Wallington Street, Covent Garden, W.C.

(Markets carried over to p. ix.)

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.			
	Above (+) or below (—) the Mean for the week ending October 9.	ACCUMULATED.			10ths In.	Ins.	No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.		
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.						
0	1 +	47	0	+ 153	8	0 aver	177	32.5	21	30
1	0 aver	50	2	0 aver +	15	6	160	22.2	39	33
2	1 -	52	0	+ 55	79	6	143	18.9	28	35
3	3 -	48	4	+ 133	121	6	139	18.9	42	39
4	4 -	48	10	+ 71	108	7	137	21.5	49	37
5	3 -	57	0	+ 193	181	8	131	21.3	52	40
6	1 +	56	0	+ 63	19	8	171	33.4	34	33
7	1 -	60	0	+ 116	93	8	158	26.1	33	35
8	2 -	57	0	+ 199	139	16	163	33.1	42	40
9	0 aver	55	0	+ 6	7	7	184	30.7	25	31
10	0 aver	66	0	+ 122	59	6	172	33.0	38	33
*	2 -	78	0	+ 303	80	9	173	27.6	55	43

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending October 9, is furnished from the Meteorological Office:—

"The weather during this week was fair and dry over the kingdom as a whole; rain, however, occurred frequently over our extreme northern and north-western districts, especially at the coast-stations, and the fall extended on one or two occasions to many other parts of the kingdom.

"The temperature was considerably below the mean over England; it just equalled the mean over Ireland and in 'Scotland, E.' and slightly exceeded it in 'Scotland, N. and W.' The highest of the maxima were registered, as a rule, on the 3rd, and ranged from 69° in 'Scotland, N.' to 65° in 'Scotland, E.' and to 60° in 'England, N.E.' the 'Midland Counties,' and 'Scotland, W.' The lowest of the minima were recorded about the middle part of the period, when the thermometer in the screen fell to 28° in the 'Midland Counties,' 39° in 'England, E.,' and 31° in 'England, S.W.,' to 35° in 'England, N.E.' and 'Ireland, S.,' 38° in 'England, N.W.,' and to 41° in the 'Channel Islands.' Over the inland counties very sharp frost occurred on the grass. Both at the beginning and end of the week the minimum values were considerably higher.

"The rainfall just equalled the mean in 'Scotland, N.' but was much less in all other parts of the kingdom. Over all the eastern and southern parts of Great Britain the fall was very slight.

"The bright sunshine varied a good deal in different parts of these islands, but was in excess of the mean in most districts. The percentage of the possible duration ranged from 55 in the 'Channel Islands,' 52 in 'England, S.,' and 49 over the 'Midland Counties,' to 28 in 'England, N.E.,' 25 in 'Ireland, N.,' and 21 in 'Scotland, N.'"

NOTICES TO CORRESPONDENTS.

AMARYLLIS BELLADONNA: Amateur. The fertilising-moss is scarcely adapted for Amaryllis in general, although the so-called Guernsey Lily may flower well in it; but then these bulbs arrive in this country with well-advanced flower-spikes, and these would be produced if the bulbs were not potted at all. A. Belladonna should be potted or top-dressed in February with rather heavy loam, a small quantity of sand, and finely-broken charcoal, potting the bulbs firmly in pots not greatly larger than the bulbs. Let one-third of the bulb be above the level of the soil when the surface is

finished off. At the first, the warmth may be about 60° by day, and 55° by night; and as the season advances, the heat may be increased slightly. When growth is complete, the season has advanced considerably, and artificial heat becomes unnecessary. Soon after this the leaves decay, if water be withheld, as it should be; and towards the end of June root-activity begins again, and in autumn the flowers appear, but no leaves, these coming later. This species does well out-of-doors, at the foot of a south wall, planted 6 or 8 inches deep in well-trenched soil; and if sandy-loam can be provided for the bulbs, so much the better.

ASSOCIATION: R. Quinn. The Nursery and Seed Trade Association, 30, Wood Street, Cheapside; Secretary, Mr. S. Worrell.

BOOKS: "CORK TREES." W. J. We are also unable to trace any notice of the book in question.

CARNATION: Mrs. R. Your plants are affected with the Carnation-spot. Burn all the affected leaves. Next year spray the young foliage once or twice in the season with weak Bordeaux Mixture, or Condy's Fluid, as a preventive.

COCOS NUCIFERA (COCO-NUT PALM): Coco-nut. The plants are worth about 10s. a piece if in good condition.

COLOURING OF THE LEAVES OF BERBERIS, &c.: Hortus. We know of no work on this subject in the English language.

CORRECTION: "Ideal" Label-holder. In the paragraph accompanying the figure of this label, p. 257, second line from the bottom for "my" read "any."

FIBROUS LOAM: Amateur. This consists of turfy-loam, dug about 5 inches, or less, in thickness; and to be fit for potting, it should have been an entire year in stack. The stacking ensures the partial decay of the roots of grasses and other plants contained in it. It should be pulled to pieces by hand—not chopped up with a spade.

GLASS HOUSE ON A SLOPE OF 1 FOOT IN 40 FEET, OR 5 FEET IN TOTAL LENGTH (200 FEET) OF RANGE: D. H. We should advise the range being built on the level by throwing down the soil from the upper half of the site of the range to the bottom; or by sinking the upper end of the range into the ground, so as to obtain a level or nearly level floor. With the range built in this manner you could have the boiler in a sunken stokehole, either at the middle or end of the range. If the slope be not altered, the boiler should be built in great part above ground, with a not greater rise in the flow pipe than 1 foot in the total length. The disadvantage of having a boiler fixed in a sunken stokehole at the bottom end of a range built on sharply ascending land, consists in the more distant sections of the piping getting much hotter than the lower—a serious matter—especially in hard weather.

GRAPES: A. C. If, as you say, the Grapes last year were black, there has, of course, been a sport, but we prefer to think that some mistake has arisen. Is there any graft upon the Vine? The bunch is not sufficiently good for us to say whether or not it is a known variety. The tunnel you speak of can have no effect upon the Vines whatever.

HYACINTH BULB: Agave. It contains myriads of the mite, at one time thought to be peculiar to the Eucharis, but which may be found upon almost all bulbs, that through any cause have become decayed. Burn all Hyacinths so attacked.

INSECTS: F. K. The common cockroach (*Blatta orientalis*), very destructive in an Orchid or any other plant-house.

LADY DOWNES' SEEDLING GRAPES: W. A. F. The want of colour and sweetness seems to point to a lack of heat during the earlier stages, and also at the finish, as Vines started in March should have ripened their fruit by the end of September. The bunch sent is well set with fine large berries, only they are not quite ripe, nor are they black. Lack of colour is a not uncommon fault with this variety. We think that your excessive use of artificial manure may have had something to do with the bad colour of the berries, by causing late growth, which would ripen badly, as would also the fruit; and if no fire-heat was employed during the latter part of August and the whole of September, the evil effects noticed might occur. Assuming that the five applications of manure amounted to 10 oz. per square yard, you have applied it at the rate of 24 cwt. per acre—three times more than was needed.

NAMES OF FRUITS.

* Applications to name fruits are so numerous at this season that it is impossible to do so in the exercise of our editorial duty. They entail an expenditure of time, labour, and money, and our readers can have little idea. We are most desirous to have our correspondents as far as we can, but we must request them to observe the rule that not more than six varieties at any one time. The specimens must be good ones, just at the ripening, and they should be properly numbered, and fully packed. We do not undertake to send answers then post, or to return fruits. Delay in any case is unavoidable.

E. F. T. Apple Eckinville; 1, Beurre d'Espérance; 2, Duchesse d'Angoulême; 3, Passe Colmar; 4, Haeon's Incomparable.—*C. Roskill.* 1, Hawden; 2, Cox's Orange; 3, Brabant Bellefleur; 4, Not known; 5, Golden Spire; 6, Pear, Conseil la Cour.—*H. Oakley.* 1, Margil; 2, Margil Ribston Pippin; 3, Golden Noble; 4, Not known; 5, W. Henderson; 6, Passe Colmar; 7, Flemish Beauty; 8, Williams' Bon Chrétien; 9, Gansel's Bergamot; 10, Emile d'Heyst.—*J. J.* We have not been able to identify the Apple sent us with certainty. It resembles Emile d'Heyst in some respects, and King of the Pines in others. It is of considerable merit.—*H. C.* 1, Blenheim Orange; 2, 10, Scarlet Nonpareil; 3, Braddick's Nonpareil; 4, Wadhurst Pippin; 5, Dutch Codlin.—*D. J. H.* Apple not recognised; 6, Southern; 1, decayed; 2, Souvenir du Comte de Lamy.—*W. Davey.* 1, 4, Eckinville; 2, not recognised; 3, probably Ringer.—*E. S.* 1, Peasgood's Nonsuch; 2, Eckinville.—*J. J.* 1, Margil; 3, Cat's Head; 4, worthless.—*X.* Cellini Pippin.—*J. F.* 1, Pitmaston Duchess; 2, small Duchesse d'Angoulême; 3, Alex. Lambré; 4, Maréchal de la Cour; 5, 6, Beurre.—*S. Brown.* 1, Yorkshire Beauty; 2, Duchess of Oldenburg; 3, Emperor Alexander; 4, Colonel Vaughan; 5, Mank's Codlin; 6, Gravenstein.—*D. Dixon.* We cannot name such a specimen.

NAMES OF PLANTS: Correspondents not answer this issue are requested to be so good as to send the following number.—Hollies. 1, Ilex aquifolium; 2, I. a. rotundifolia (probably); 3, Hendersoni; 4, I. a. myrtifolia; 5, I. a. serrata; 6, I. a. Belgica (probably).—*H. C.* 1, I. torium purpureum.—*E. Smith.* Liquidambar styraciflua.—*H. C. Prinsep.* Billbergia Portulacastrum.—*Armitage Brothers.* Erigeron speciosus, form.—*L. M. C. S.* Salvia azurea.—*H. C. Leicester.* We do not recognise the grass.

SAND, &c.: Amateur. Unless the loam is tenacious, leaf-soil mixed with it in the proportion of 1 to 1 will suffice to give the desired pot without the use of sand, but leaf mould is a scarce commodity in amateurs' gardens, and decayed, less suitable vegetable-matter has to be used instead, and sand becomes a necessity. If sand if it be washed of the loam often found with it answers well enough.

THE ROSARY AT LUTON HOO: A Subscriber. Unfortunately, we have no figure showing the position of the ground, but if our memory serves us aright, the rosary is situated in a natural hollow in the grounds, and is connected with the hardy fernery, and it has a walk running down the centre, and at its widest part, a circular path furnished with flower-beds. If this note catches the eye of Madame de Falbe's garden would, perhaps, kindly furnish the particular desire.

VINES: A. B. H. If the wood be well-ripened Vines will fruit more abundantly next year than the canes were raised the same year, they planted, i.e., 1894, they should have borne a dozen bunches each this year. If older Vines planted, the crop should have been larger. We would advise you to obtain a manual on the culture; the kind of knowledge required to grow good Grapes and other fruits, &c., not coming to any one naturally.

COMMUNICATIONS RECEIVED.—Dr. P.—G. L. P.—M. E. P.—O. F., Zurich.—L. B.—R. H.—J. A.—D. M. S.—S. & Co.—Nial.—W. S.—W. E. P.—W. R. F.—H. & J. E.—W. K.—E. C.—G. S. B.—M. C. G.—G. S. J.—D. M. W.—A. S.—H. C.—T. G. H.—W. G.—R. I. L.—W. Cook.—W. C.—C. W. D.

PHOTOGRAPHS AND SPECIMENS RECEIVED.—M. M. Lenz, Dr. Schröter, Zurich.—Mr. Geo. Croucher.—Ernst I. A. D. W.

DIED.—WILLIAM A. STILES, the Editor of Garden and Forest, New York, U.S.A., on Wednesday October 6.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 23, 1897.

THE HORTICULTURAL TRADE DURING THE PAST SIXTY YEARS.

THE article which appears in the *Gardeners' Chronicle*, p. 225, on "The Horticultural Trade During the Past Sixty Years," by Mr. Richard Dean, appears to me most excellent and interesting. Mr. Dean must have devoted much labour and research concerning the earlier years of Her Majesty's reign in producing this valuable information.

As I was in the nursery, as well as the seed trade sixty years ago, and had transactions with most of the nurserymen and wholesale seed firms of those days, I am able now, being in my eighty-third year, to testify to the correctness of Mr. Dean's account, which not many others in the trade now can do. There are very few of the firms mentioned in this article which I do not well remember, and not one appears to me to be incorrectly named or described. I may, however, be able to add a few remarks concerning some of them, which may afford additional interest to your many readers, especially the elder of them, who are still in the nursery and seed trade, or who have retired from it, as I myself did with my brother Alfred nine years ago.

Mr. J. G. Waite mentioned by Mr. Dean as of Hatton Garden in 1837, I knew, first as a market gardener at Camberwell, with a public-house conducted by some members of his family, while he attended to his outdoor business, which at that time included growing Lettuce and Radish seeds, which I used to buy of him fifty or sixty years ago. From Camberwell he removed to Hatton Garden, thence to Holborn (New Oxford Street), continually increasing his premises and business. He was an uneducated man, but clever, and very energetic, greatly annoying the older wholesale seed firms, as he did not join their ring or syndicate, but greatly undersold them, doing an enormous business. But his health gave way, and the business fell into the hands principally of his nephew, Mr. Burnell, who removed to Southwark Street, where a highly respectable trade was carried on under the title of Waite, Burnell & Co.

Flanagan & Son, Mansion House Street, as stated by Mr. Dean, carried on principally a retail trade, including the sale of Dahlia plants, when Criterion, Widnall's Perfection, and other new kinds, sold freely at 10s. 6d. each.

The firm of Noble & Co., originally William & John Noble, was one of the oldest of the wholesale houses; but the two brothers died almost suddenly, one of cholera; and Mr. R. Cooper and Mr. Bolton, who had long served them, became proprietors of the same firm,

under the title of Noble, Cooper & Bolton. But the oldest firm which I remember was Beck & Co., subsequently Beck, Henderson & Child, from whom I used to purchase seeds previous to contracting with certain farmers and gardeners to grow specially for my firm, trading in my father's name, as I was only sixteen years of age. In reply to our inquiry as to when we first dealt with them, Messrs. Beck, Henderson & Child replied, in a letter now before me, "On referring to our books, we find that we first had the pleasure of opening an account with your house on February 3, 1831, in the name of John Sutton; the first alteration was in 1837 to John Sutton & Son, and subsequently to John Sutton & Sons in 1846." Very early in the period Mr. George Batt, a former assistant in Beck & Co.'s business, started trading at 412, Strand, which firm subsequently became Batt & Rutley, and then Batt, Rutley & Silverlook.

Of the firms of Gibbs & Co., I may mention that the original was Thomas Gibbs & Co., of Halfmoon Street, Piccadilly, which firm was subsequently carried on by Mr. Thomas Gibbs' son, Mr. T. B. Brandreth Gibbs, who became Sir Brandreth Gibbs, Honorary Secretary and Director of the Smithfield Club. Besides the original Thomas Gibbs, father of Sir Brandreth Gibbs, there was a brother of his, Mr. George Gibbs, who carried on business at the same time at Down Street, Piccadilly, who, dying, left the business to his son, Thomas Gibbs, Jun., who died only a few years ago.

Of nurserymen, Mr. T. Rivers, Jun., of Sawbridgeworth, was by no means a young man in 1837, though his father was still living. He was an enthusiastic and scientific botanist, as well as a nurseryman, and he excelled, not only in fruit trees, but also in Roses, taking periodical journeys to France for collecting sorts of Roses and Pears which were new to English cultivators. I knew him intimately, having slept several times at his house, while on business visits. At that time he had a considerable retail seed trade, though he devoted his attention principally to the nursery; while I had a considerable nursery trade, though interested chiefly in the seed trade. We both agreed that it was impossible to really excel as we wished while engaged in both branches, so he determined to give up the seed trade while I gave up the nursery trade. The establishment, in 1841, by Sir Joseph Paxton, Dr. Lindley, and others, of the *Gardeners' Chronicle*, did great service to the trade and to horticulture. Prior to this there had been Glenny's *Gardeners' Gazette*, the first weekly horticultural paper, which was very good in its way, but was deficient in many important particulars. Harrison's *Floricultural Cabinet* existed as a monthly illustrated periodical. The *Gardeners' Chronicle*, however, met fully the requirements of nurserymen and seedsmen, and was an invaluable medium of communication between the trade and their customers, many rising firms increasing their trade rapidly by advertising freely in this paper, which soon became extensively circulated.

Another nursery firm mentioned by Mr. Dean is worthy of special notice, namely, Waterer of Knap Hill. This firm has always been the largest for American plants and Conifers of any in the kingdom, and is now the largest in the world. For many years at Bagshot Mr. John Waterer had a very fine stock of choice American plants, with an extensive retail trade; while the Knap Hill firm confined themselves principally to the wholesale trade. The Knap Hill firm in 1837 was carried

on by Mr. Michael Waterer, who was succeeded by Mr. Hosea Waterer, who was followed by Mr. Anthony Waterer (lately deceased), and now with continued energy and ability by his son, the present Anthony Waterer. I remember many years ago meeting, in the blooming season at the Knap Hill dinner-table, a large number of nurserymen, including Chandler, of Vauxhall; Lee, of Hammersmith; Kernan, of Russell Street, Covent Garden; and others. During several weeks of every summer this was a rendezvous where nurserymen were sure of meeting each other.

The Brothers Brown, of Slough, to whom Mr. Dean refers, were three in 1837, Charles, Thomas, and Edward. Charles was the eldest and most experienced nurseryman, but he died early. The remaining brothers carried on the business at Slough energetically, with the addition of a shop in Piccadilly for the sale of plants and flowers, which they sent up daily for a year or two. I remember at one of the Dahlia shows at Salt Hill, Charles Brown and Mr. George Glenny, editor of the *Gardeners' Gazette*, had the honour of conducting Queen Adelaide through the show, and the Browns having exhibited a fine stand of a new seedling Dahlia, it was by permission named "Queen Adelaide," a delicate white flower tipped with rose. A few years later Edward Brown retired from business, and Thomas went abroad, being succeeded by Mr. Cutter, from America, who very soon gave it up to Mr. Charles Turner, who excelled all others in florists' flowers, from which time it has been entitled the "Royal Nursery," and we all know what an extensive business is now carried on by his sons.

Messrs. Brown were famous for the finest bed of choice Tulips in the kingdom, which Charles Turner continued to cultivate for some years, but before his death he distributed these valuable bulbs among several of his friends. A useful lesson for us all was taught by Mr. Turner. Though he had an experienced foreman for each department, he "saw to everything himself." When a great Dahlia show was drawing nigh, he would watch and shade the blooms selected, and finally cut them and pack them himself, and travel all night if the show was far distant that he might himself make the final selection from the boxes for the stand, in which he would himself set them up. It was the same with the Roses, Carnations, Pelargoniums, and other florists' flowers. Consequently (as he said), he always took first prizes, and rare indeed was it to see him second at any show. When speaking of the success we had each attained in business, I remarked that I did not think I could ever have excelled as a nurseryman and florist as he had done, he replied, "Oh, yes, you would, if you had given the same personal attention to it that you have given to seeds."

One other among the nurserymen of 1837, named by Mr. Dean, Mr. Skirving, of Liverpool, is worthy of more special notice. He raised many thousands of the *Araucaria imbricata* from imported seed before anyone else in England, supplying the trade extensively; and as a seedsman he was distinguished by raising and introducing the "Skirving Swede," which he exhibited at the Smithfield Club shows when they were still held at the Baker Street Bazaar. This Swede produced 40 to 50 per cent. more bulk and weight per acre than the old Purple-top and Green-top Swedes then in cultivation, though rather coarse compared with the Caamption and other large globular Swedes since introduced. Mr. William Noble (of Fleet Street) remarked to me that Skirving had done more than any man for flock-masters by intr

ducing that Swede, and that he (Mr. Noble) had made hundreds of pounds by selling the seed.

Another firm should be mentioned — the Ronalds of Brentford, who were thoroughly established as wholesale seed merchants as well as nurserymen as early as 1837.

In addition to the Lawson firm alluded to by Mr. R. Dean at p. 225, mention should also be made of the Drummonds. Concerning this gentleman, the following extract from a letter from Mr. Peter Drummond, dated June 29, 1854, affords information:—

"There are four brothers of us connected with the seed, nursery, and implement business. Since 1843 we have had a branch in Dublin, managed by one of my brothers, who, with his family, resides there, with a good staff under him. Here (at Stirling) one of my brothers looks after the nursery department, with a staff under him. The seed department here is now superintended by one of my brothers, although I had hard work at it a good many years. (Signed) PETER DRUMMOND, Stirling, N.B."

I think, too, that Mr. Dean would include among the distinguished early Rose growers Messrs. Wood & Son, of the Maresfield Nurseries, near Uckfield, Sussex. *Martin Hope Sutton.*

NEW OR NOTEWORTHY PLANTS.

ASPIDIUM PURDLEI, *Jenm., n. sp.*

STIPITES stout, erect, 1 to 1½ foot long, glossy, brown, or castaneous, as are also the rachises and ribs; fronds erect, 1½ to 2½ feet long or more, ¾ to 1½ foot wide, pinnate, chartaceous, pellucid, glabrous, dark green, composed of a large terminal trilobed, or ovate-oblong and acuminate segment, a span to a foot long, 4 to 8 inches wide, more or less deeply lobed at the base, above sinuated or lobed, the apex plain, and two or more pairs of sub-distant, oblong, lanceolate-acuminate, up-curved lateral pinnæ, the owest of which are petiolate to 1 or 1½ inch, ½ to 1 foot long, 3 to 6 inches wide, the margins sinuated or lobed, the base deeply lobed on each side, the lobes being acuminate, and sometimes quite free; upper pairs sinuated or lobate, sessile or shortly stipitate, the base often deeply lobed, and somewhat rounded; primary veins costate, ½ to ¾ inch apart, very oblique, connected by a very copious fine areolation, containing more or less free included veinlets; sori very copious, moderately small, irregularly serial on each side of the main veins, and more or less scattered between; involucre reniform, curling with age, persistent; receptacles copiously minutely scaly.

Trinidad. Collected by Purdie at Maraval. In size, strength of the vascular parts, and conformation, this resembles *Aspidium macrophyllum*, Sw., from which it is distinguished by its copious and scattered (not bi-serial) sori. It is a larger, stronger, and more robust species than any of the other local species with scattered sori. *G. S. Jenman, Demerara, September 25.*

APERA ARUNDINACEA, *Hooker.* (Fig. 84, p. 283.)

This elegant New Zealand grass was raised from seed sown by Messrs. Veitch in their nursery at Combe Wood, near Kingston, in January, 1896. It was shown by them in flower at a recent meeting of the Royal Horticultural Society. Sir Joseph Hooker describes it in his *Handbook of the New Zealand Flora*, p. 326. Up to the present time, it has been grown in a cool house, but it may prove hardy in some places. It is a native of the northern island of New Zealand, and of the eastern shores of Australia.

ORCHID NOTES AND GLEANINGS.

TWO FINE CATTLEYAS.

Two grand examples of large-flowered Cattleyas are sent by Mr. Wm. Bolton, Wilderspool, Warrington, the one serving to show the variability of *Cattleya Warscewiczii*, and the other representing one of the highest forms of natural hybrid between that species

and *C. Dowiana aurea*. This was named *C. Massaiana Boltoniana*, and it received a First-class Certificate at the Manchester and North of England Orchid Society on October 7. The spike had four grand flowers, which have preserved their beauty and fragrance until now. It may be said that the name "*Massaiana*" is only a garden term for the form of *C. Hardyana* with white-mottled and veined sepals and petals. In Mr. Bolton's variety, the base of each of the sepals is silvery-white, the remaining portion bright rose with some blotches and veining of white. The lip in its gold veining, and broad crimson-purple front, is like the best *C. Dowiana aurea*, and the flower is very fragrant. A pretty feature in it is the striated purple margin of the side lobes of the lip.

The other flower is of a charming form of *C. Warscewiczii* of most perfect shape. The sepals and petals are white, suffused with a very slight tinge of lavender colour, which is not perceptible at a little distance. The lip is bright light purple, shading to lilac at the margin, and bearing the two patches of yellow colour, one on each side of the lip, as usually seen in the species, but in this one much lighter than usual. *J. O.B.*

CARDIFF PUBLIC GARDENS.

THERE has been a fortunate awakening in this country to the importance of securing sites in towns for the formation of public parks or open spaces. It is true that a lively interest has only been aroused when too late, in the case of many towns, to acquire sites close to the densely-populated areas that require them most. Land that might have been obtained years ago at comparatively small outlay has now become so valuable that to obtain it for the purposes of a public park or recreation-ground is out of the question. The same circumstances and results have happened in America. A circular just to hand gives particulars of a society founded in May last at Louisville, to be known as the "Park and Outdoor Art Association," and it has apparently the same objects as Earl Meath's Metropolitan Public Parks Association in London, which has done so much to preserve to Londoners their right of commons, and to purchase for them various sites for open spaces wherever it has been possible. In a paper delivered before the New York Historical Society by Mr. Gherardi Davis, the condition of New York is described in much the same terms as we should describe London; indeed, in respect to its open spaces, that city is unfavourably compared both with Paris and London. In some of the newer and better districts there are plenty of parks; in the older and more populated localities comparatively few, and that is the case in London. We must leave the general subject, however, to consider more closely what has been, and what is now being done in Cardiff, a town that has grown during most people's remembrance from comparative non-importance to one of the principal ports of the country. In the last fifteen years whole suburbs have been added; and even in 1891 the population was only 128,915, while to-day it is estimated at over 170,000. Following the enterprising and far-seeing policy of the late Lord Bute in building the docks, Cardiff developed so rapidly, that naturally little time was given to such a subject as this, when trade and commerce kept everyone busy. Not until about ten years ago, was it decided that Cardiff was to have a public park, and seven years since the council appointed its first "superintendent of parks and open spaces" electing to this office Mr. W. W. Pettigrew, son of the present gardener at Cardiff Castle.

ROATH PARK

is situate about 1½ mile from the town's centre, and consists of 109 acres. It was opened to the public three years ago. The site was given by the present Lord Bute upon certain conditions, including the making of public roads round and through the park. The land is inconveniently narrow, and for some years it will be impossible to confine the view to the park. Public roads intersect it at several points, and the land is thus divided into distinct sections, which have accordingly been laid out as such. The pleasure-grounds are 11 acres, the

botanic garden 15 acres, the lake section 41 acres, the wild-garden 8 acres, and the recreation-ground 23 acres. There are 2 acres known as the "oval" yet to be laid out.

The work connected with the formation of this park includes upwards of 3½ miles of 40 feet wide roads, and ½ mile of 30 feet roadway. The sections of the park are surrounded by 4½ miles of undimable iron-fencing. Coming to the gardener's work in the park, it should cause the town great satisfaction. We have already said that the site is a narrow one, and the park therefore is of great length. Any amount of landscape genius would fail to alter that fact, but there has been no opportunity neglected to minimise its disadvantages. The first section of 23 acres, viz. the recreation-ground, may be dismissed in a very few words, for important though it is as a play-ground, there is no horticulture in it. It is covered with grass. There are surprisingly few restrictions in regard to it, and it remains open day and night.

The lake section includes but little margin beyond the area of the lake itself. This is a magnificent sheet of water, and has been obtained by damming a stream that runs through the park. It is not surprising that such a beautiful and large area of water has proved a most popular resort for boating and bathing. But now the lake is made, and it is filled with water, all difficulties to the enjoyment of boating have not been overcome. The two water weeds, *Myriophyllum verticillatum*, L., and *Potamogeton pectinatus*, L., have given Mr. Pettigrew rather more opportunity than desirable for the practice of his destroying qualities. Some of the readers of the *Gardeners' Chronicle* may know of a ready means to combat the pests, and if this be so, such news will be very welcome to many superintendents of public parks. Only in the deepest water is the lake free from their growth; in other places they spring from the bottom, and after passing through the water float on the surface. To rake them from the water by means of boats entails very much expense and labour; and if allowed to become at all thick, they render boating dangerous, because the oars are liable to become fast in their coils. This too, although the water is bedecked with several pairs of swans, and numerous ducks, and other water-fowl.

The section known as the "Wild Garden" is kept in a freer style than the pleasure-grounds. The old shrubberies have been left, and most other of the vegetation. The grass is cut once or twice a year, but not before a host of planted bulbs have flowered, nor until the natural wild plants have blossomed. There are rustic bridges, a dripping water-course, pretty glimpses through the trees, and ingeniously disposed seats. It is altogether a place for quiet and natural enjoyment.

There are 11 acres reserved strictly as a pleasure ground; where the grass is kept closely mown and smooth, the verges are faultless, and there are trim flower-beds. The perfect verges themselves are sufficient evidence that you are not allowed to run over that grass; no, not even to examine the flower-beds. It is a pleasure-ground, the verdure is a law, and it is kept as one attached to a private residence would be. Of course, this may cause a little irritation to some of the visitors; one could hardly expect all of them to look at the question from the standpoint a gardener does, for to him an ill-used lawn is something past toleration. So the visitor must be content with the unrestricted use of the recreation-ground, the tolerable freedom he enjoys in the wild garden, and in the botanic section of which we shall speak presently. There is much else, however, to notice in the pleasure-ground beside the soft lawns and trim flower-beds: the natural watercourse through the ground has been widened and made pretty, the islands in the miniature lake presents a charming appearance, and some of the species of ornamental trees planted are interesting and uncommon; while those very essential ornaments of any pleasure-ground, the flowering-shrubs, are represented by select species.

The climate of South Wales being fairly mild, some of the less hardy of flowering-shrubs have been planted, species that, like *Paulownia imperialis*, are

able to be cut back severely in any but favourable calities. The Paulownia has commenced well, and making very robust growth; but will it bloom? ear to it is the one hardy species of *Clerodendron trichotomum*, a Japanese bush that grows about as gh as an ordinary man, very handsome, and figured the *Botanical Magazine*, tab. 6561. But none of the ees or shrubs have had time to develop much at

botanic garden, and whether or not in the other divisions there is evidence that the designer was once at Kew, there is sufficient here to suggest, at any rate, the work of a "Kewite." In these 15 acres there are large oblong beds, just as at Kew, where plants are grouped together in their natural orders, for the convenience of students who may visit the park. It is an excellent practice, and indicates

attempt the work in the largest of the parks, the extra facilities for the study of natural specimens will be appreciated. Some of the natural orders are even now fairly well represented in the beds at Cardiff, but others are less easy of acquirement, from the fact that whilst many of the orders comprise abundance of hardy plants, others consist of exotic and tender plants chiefly, and so the beds are not easily furnished. The Sedums and Saxifragas were especially comprehensive, and the pieces of stone studded in the surface of the soil, appeared to suit them well. I took a number of notes of various plants here, and of some uncommon flowering species that had been planted to furnish vacant spaces in these beds for the summer, but I withhold them, for the reason that it is desirable to refer briefly to the other open spaces in Cardiff. At the highest point, in a fully-exposed position in this section, where the sun will reach the plants without obstruction, a rockery has been made, and the process of clothing this with a representative collection of plants is going on. In front of it is a bog, where plants that require such a position will find a suitable place. Already, several rare species have been put there. Adjoining this is a peat-border, where those hard-wooded species known as American plants have been grouped. Visitors are allowed to wander over the grass in the Botanic Garden as they desire.

VICTORIA PARK

has an area of 25 acres, and is in a suburb of the town called Canton. It was first opened to the public a week previous to the Jubilee festivities, and accordingly the name of Ely Park, by which the site was hitherto known, was changed to "Victoria" Park. It is provided with a small lake near the centre, and in this is a fountain of the "Convolvulus" type. It throws up a beautiful volume of water in the shape of a Convolvulus. There is a band-stand, and the design of flower beds, paths, shrubberies, &c., is pleasing. Incidentally, some Rose beds, the Rose-plants in which were unusually vigorous, were noted.

SMALLER AREAS.

Sites for open spaces have been preserved in various parts of the town. Canton Recreation Ground comprises eleven acres, and a piece of land of equal size adjoining, is let as allotments, but belongs to the town. Grange-town Open Space covers 3½ acres, and was opened to the public two years ago. Like some of the other sites, it had to be made up to its present level by adding 3 feet deep of town's refuse. Despencer and Clare Gardens at Riverside, represent a little more than 1 acre.

In the Splotlands, an area of 1½ acres is known as Moorland Road Gardens, and is in one of the newest districts in the town, close to the Channel. Loudon Square, on the contrary, is in one of the oldest and most densely populated districts. Its area is about 1½ acres. In Canton the Plasturton Gardens are ½ acre, and in Roath the Howard Gardens are 1½ acre, and the Roath Church Gardens ½ acre. There is still another garden of about ½ acre known as Adamstown Square.

Cardiff may be considered fortunate in that something like forty years ago the late Marchioness of Bute lent for the town's use what is now known as the Sophia Gardens. It is a park of considerable size, and is not more than five minutes' walk from the centre of the town. It has never been given to the borough, and the cost of maintaining the grounds in condition is not shared by the ratepayers. In the Sophia Gardens are held the annual horticultural shows, and for this and similar purposes it is very suitable. The public have also the privilege of use of another private park 10 acres in extent belonging to Mr. Pyke Thompson. Neither this nor the Sophia Gardens, however, must be counted among the open spaces of the borough. Very recently Cardiff has acquired two sites that, though for some time to come they may not be laid out as parks, must be mentioned here. The first is Cathay's Park, 60 acres in extent, recently owned, by Lord Bute, and adjoining the Castle Gardens within a couple of minutes' walk of the town. It is intended to build a new Town Hall upon this site,

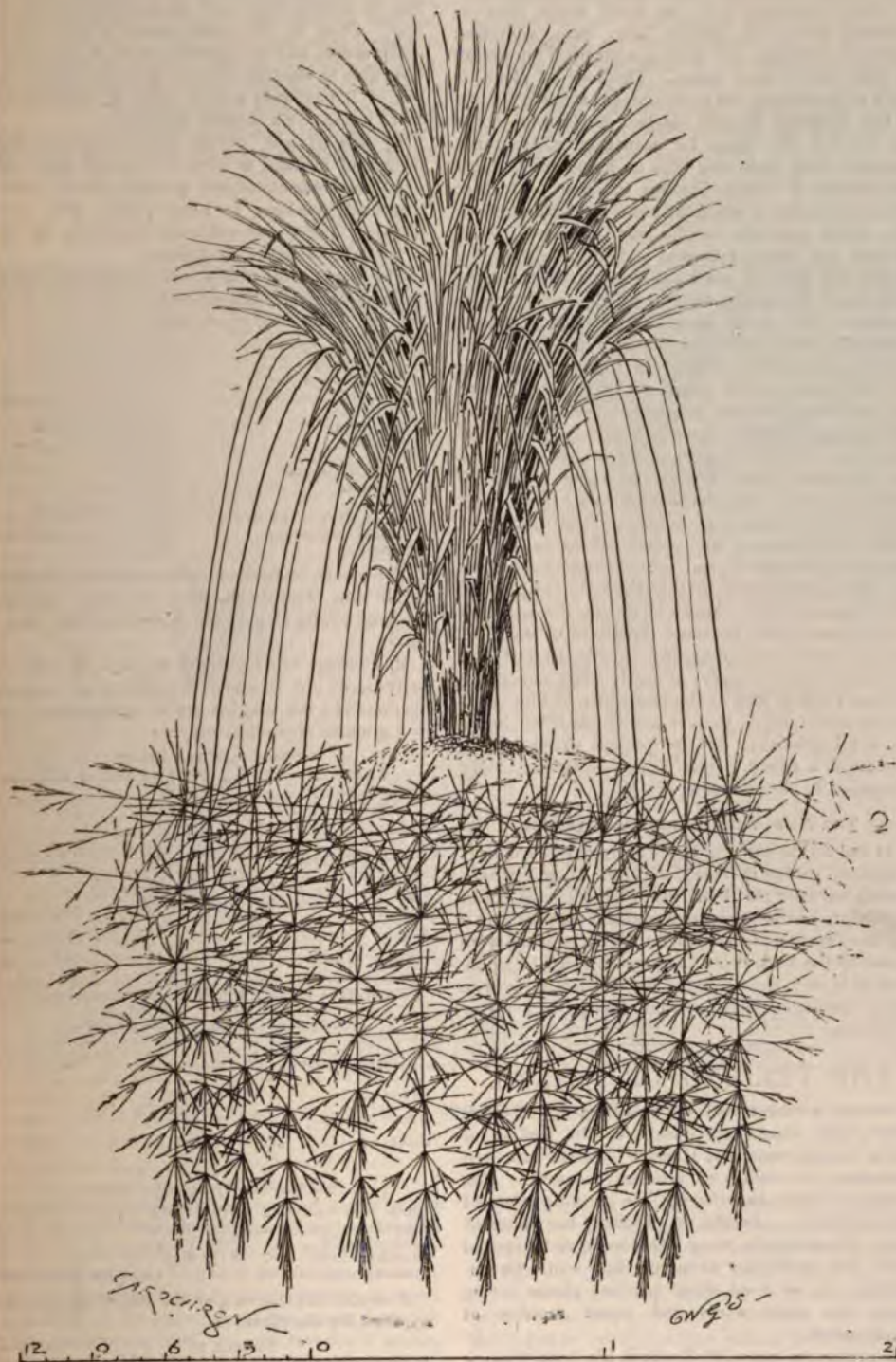


FIG. 84—APURA ARUNDINACEA: A GRASS FROM NEW ZEALAND. (SEE P. 282.)

present, and it would be uninteresting to enumerate them. The plantations in some cases contain Michaelmas Daises as stop-gaps until more growth has been made, and in the present month the landscape is the better for them; they are yielding masses of bloom. Near to the entrance to the pleasure-ground section has just been completed a residence for the superintendent.

Now we come to the section which is laid out as a

that Mr. Pettigrew is doing the most he can to afford means of education as well as recreation. By-the-way, there appears to be a disposition on the part of the London County Council to add such a feature in a modified form to the metropolitan parks. Anent this, it will be worth while to remember that a botanic garden is not requisite in every parish, and Kew is not a great distance from any point in London. At the same time, if the Council only

but otherwise the ground must remain an open space, in accordance with a stipulation of Lord Bute's. The other piece of ground is at present known as Llandaff Fields, in the direction of the town approaching the village and city of Llandaff, where there is an ancient cathedral. This site was purchased for something like £69,000.

To sum up then the parks and open spaces at present belonging to the town, amount to something over 250 acres, and nearly the whole of this has been acquired very recently. The borough is evidently awake to the importance of the subject, but it will no doubt do more than has been commenced, and before long. Cardiff does not possess a winter garden. It ought to do so, either in the Roath Park or somewhere else; and if it should be built in Cathay's Park, it could not possibly be given a more convenient position. *R. H. Pearson.*

AMERICAN NOTES.

THE POTATO SCAB.

(From our own Correspondent.)

MR. H. H. WILLIS' recent note in the *Gardeners' Chronicle* on this subject may or may not have furnished novel information to European readers, but when the Potato-scab is spoken of here, one as naturally thinks of corrosive sublimate as he does of thunder when he sees lightning. The use of corrosive sublimate, however, is already threatened. Thanks to our great State experiment stations, the march is ever onward, and in the hands of Dr. Halsted, of the New Jersey station, ordinary flowers-of-sulphur have given the most satisfactory results. This is dusted in the rows at the rate of 200 lb. per acre. Dr. Arthur, of Indiana, has lately investigated formaline as a preventive, and his conclusions, as given in a recent bulletin, are favourable. However, the value of this can hardly be said to be fully demonstrated as yet.

AMERICAN INSTITUTE SHOW.

The great annual "fair," or exhibition, held under the auspices of this body, is now in progress in New York city. The first week's horticultural display was made up chiefly of Dahlias, which were of remarkably fine quality. One noticeable feature of the show was the hitherto unknown men who came into the competition, and altogether some 50,000 blooms were staged. The fact that so widespread an interest really exists in the Dahlia was not realised by New York, and the recent show was an education in a way not expected by the promoters. The growing interest in the Dahlia is very real, and the American Dahlia Society, with headquarters in Philadelphia, Pa., is doing a missionary's work. The new type of large-flowered Cactus Dahlia is very much in favour, and far excels the show or fancy in popular estimation. Mrs. Agnew and C. W. Bruton, respectively fiery-crimson and sulphur-yellow, are specially fine varieties. Among new plants there is nothing not already made familiar by your own shows. One exhibitor, Mr. Duckham, sends a marvellous display of plants never before exhibited in New York, embracing Palms and Rex Begonias, all from the St. Albans nurseries of F. Sander & Co.

ENGLISH TOMATOS.

There is quite a "boom" on these for forcing purposes, as I have already mentioned; but now along comes another very capable gardener, and argues for them for the general crop. Surely there is a good chance for some wide-awake seedsman.

DEATH OF W. A. STILES.

On October 6, the horticultural circle suffered a sad loss by the death of the popular managing editor of *Garden and Forest*. In recent years Mr. Stiles had been a visitor to Europe, and there as at home, endeared himself to all who had to do with him. Mr. Stiles had been laid up for many weeks, after years of struggle against a fatal disease, cancer; but none the less the news of the end was a sad shock to his many friends. Born in 1837, he graduated from Yale in 1859, and became a teacher in his father's school. From that

time on, he had an eventful career, and always by his forceful personality forged his way to the front. He was for a time engineer for the Union Pacific railway, and subsequently became identified with politics. He drifted into journalism, and became agricultural editor of the *Philadelphia Weekly Press*, and afterwards was on the staff of the *New York Tribune*. During the time that he was in California, Mr. Stiles began what afterwards became the chief study of his life, that of plants and flowers, and during his long convalescence in Sussex county, N.J., he spent much time in roaming about his father's large farm, collecting plants and flowers, and gaining a practical knowledge of them and of their habits. This love of plant-life grew to a passion, and he became an expert in botany. When Professor Sargent started *Garden and Forest* he selected Mr. Stiles for managing editor, and, together, they made long trips on horseback through the forests of North Carolina in order to further their knowledge of arboriculture. Everything which the earth produces in the way of plants, trees, flowers and shrubs possessed a vivid interest for Mr. Stiles, and although not a practical horticulturist, he was one of the first critics of landscape gardening in America. For many years before Mayor Strong appointed him a Park Commissioner, Mr. Stiles took a deep and practical interest in the park system of the city, and he was always ready to defend with his pen the recreation grounds of the people from the encroachments of those who favoured the use of them for all sorts of schemes for which they were not intended. From the day he entered the Park Board, he was a vigorous champion of expert judgment on all matters pertaining to the making of parks; there was not one of his colleagues who did not respect his ability, and acknowledge that he was the best qualified man in the Board for the place of Park Commissioner. Alone he fought the adoption of the plans for the Botanical Garden in Bronx Park, which a committee of experts had condemned, and in this he had the support of nearly every newspaper in New York, as well as the Federation of Fine Arts. A clear and forcible thinker and speaker, Mr. Stiles was a valuable ally, and the present writer mourns the loss of a friend. [Mr. Stiles' death was briefly announced in our last issue. Ed.]

THE NEW YORK BOTANICAL GARDENS.

At last all the skirmishing is over, and we shall get a botanical garden in New York city. There has been a tussle between the Park Board (who by the act of Legislature had to give the ground and approve plan) and the directors of the garden. Until the plans were passed by the Park Board no progress could be made. Now all is over, the necessary 500,000 dols. have been voted, and the work should be pushed along. *L. Barron.*

THE FEEDING OF PLANTS.

DURING a recent visit to Versailles, I was much struck with some experiments in the feeding of plants in pots which M. Georges Truffaut has been conducting by means of artificial manures. The novelty of these experiments lies in the method of the application. Briefly, M. Truffaut has reasoned thus: Theoretically, every plant requires its special food; but practically to supply this would be impossible—so we must group together plants having nearly the same wants and equal rapidity of development.

For some six years, M. Truffaut has been working with a view to ascertain accurately the requirements of each plant. 200 analyses have been made, and of these some thirty groups have been formed. There are groups of quick-growing plants which need much food in a short time; and slow-growing plants requiring little food, but extended over a long period.

The right amount of properly proportioned vegetable food brought to within 99 per cent. purity, required for, say, six months, is weighed and then divided into two, four, or six pills (capsules), according to the rapidity of growth and the quantity required. All the salts used represent the general requirements of the group, and are perfectly dry, pure and immediately soluble.

The capsules (or pills, as M. Truffaut prefers to call them) have a metallic cover which prevents too rapid diffusion and solution. The diffusion takes place through the foldings of the metal, and the thicker the coating the slower the diffusion. Greater compression also retards the diffusion.

As the salts dissolve and disappear they are replaced by a core which expands until it completely fills the pill. The salts have no effect upon the metal cover, so that the pill remains firm and hard, and is always clean and unobjectionable in every way. Thus, by the three means, of metal coating, compression, and an expanding core, M. Truffaut has been able to regulate to a few days the solubility of a pill of immediately soluble salts, in experiments of three weeks to six months' duration.

By this process, anyone would be able, without danger of mistake, to give the correct amount and exact requirements to each group of plants, or indeed, practically speaking, to every plant. The waste of nitrogen, hitherto an expensive drawback to the use of artificial fertilisers, is obviated.

The plants, thus treated, which I saw at Versailles, are wonderful recommendations of the value of the method. The chief plants were:—

<i>Pteris tremula</i>	<i>Pandanus utilis</i>
" <i>cristata</i>	<i>Dracena Bruanti</i>
" <i>serrulata</i>	" <i>amabilis</i>
<i>Geranium</i>	<i>Asparagus plumosus</i>
<i>Canna</i>	" <i>Sprengeri</i>
<i>Bouvardia</i>	<i>Corypha australis</i>
<i>Fuchsia</i>	<i>Kentia Belmoreana</i>
<i>Cuphea</i>	<i>Curculigo</i>
<i>Chrysanthemum</i>	<i>Lantana</i>
<i>Adiantum</i>	<i>Areca sapida</i>
<i>Phoenix</i>	<i>Coccos Weddelliana</i>
<i>Colusa</i> , treated by analogy	<i>Acalypha Macfleckana</i>
only (a failure)	<i>Davallia macrophylla</i>
<i>Scorothia</i>	<i>Begonia Rex</i>

The plants, instead of being potted-on, have been fed in this manner, and they are large, splendidly coloured plants, in pots which are one-half the usual size.

M. Truffaut has furnished me with details of the analysis, &c., of *Dracena Bruanti*, as an example of his method; the weights are in grammes (15 grains = 1 gramme approximately):—

DRACENA RUBRA BRUANTII.			
Leaves ...	...	57.63	per cent. of weight
Stems ...	...	22.19	" "
Roots ...	...	20.17	" "

One Plant.	Fresh State.	Dry.	Dry Matter.
	Grammes.	Grammes.	
Leaves ...	300	57	23.5 per cent.
Stems ...	77	17	22.07 "
Roots ...	70	14	20.0 "

Fresh state, 347 gr.; dry, 88 gr.; 25.36 mean per cent.

One hundred Parts of Dry Matter contain—

Constituents.	Ashes.	Nitrogen.
Leaves ...	5.94	1.31
Stems ...	5.76	.73
Roots ...	6.15	1.39

One hundred Parts of Ashes contain—

Silica ...	8.64	Chalk ...	18.02
Chloride ...	5.93	Magnesia ...	3.97
Sulphuric acid ...	7.98	Potash ...	22.10
Phosphoric acid ...	0.48	Soda ...	1.70
Iron oxide and alumina 17.14		And some carbonates	

A careful calculation gives the following mixture required for the plant:—

Ammonia phosphate...	Percent.	Nitrate of soda ...	Percent.
Ir.-n sulphate ...	8.1	Chloride of ammonia...	4.3
Magnesia sulphate ...	12.7	Nitrate of potash ...	45.5

Each plant receives five pills of 2 grammes each for eight months' growth.

The illustration shown (fig. 85) is a photograph of one untreated plant, and one treated with its proper food in pill form; the difference is apparent.

Pending the completion of his experiments, M. Truffaut has patented his process in France, England, and other countries. I cannot vouch for the accuracy of the figures given above, as I regard this subject entirely from the point of view of a practical gardener; but M. Truffaut is well known as a trained chemist, and he has been working in conjunction with one of the most prominent young scientists in France, *Georges Louis Paul, Chénant*.

SHORT-EARED OWL

(Otus [Strix] brachyotus).

Short-eared owl is different in its habits from those found in Great Britain, which live in thick and plantations, or in barns, churches, and seldom leave their retreats during the day. Those of the short-eared owl are heath and moor-shes, furzy downs, meadows, Turnip-fields, and ces, principally in the north of England and, though it is found occasionally in many counties. It flies in the daytime, and may hunting for mice, voles, and other vermin at of the day. Prentis in his *Birds of Rain-ent*, says that the short-eared owl is not on, and comes in the autumn. It visits the where it is safe, nearly every year. When part-otting, sportsmen have met with the owls in

a normal winter migrant to these islands, appearing simultaneously with the woodcock (whence it is popularly known as the 'woodcock owl'), and usually departing in spring. Nests in ordinary seasons are of comparatively rare occurrence in Great Britain, but in consequence of the vast multiplication of their favourite food, the vole, these owls have not only arrived in unusual numbers, but have remained and bred freely all over the district affected, laying from eight to thirteen eggs (though Newton in his edition of *Yarrell's British Birds* mentions seven as an unusual number), and rearing more than one brood. The shepherd on Crooked-Stone, near Crauford, has counted fourteen nests on his ground. The small wood behind the farmstead of Howpasley presented a remarkable appearance, the ground being densely covered with the pellets (or 'castings') of owls composed of the fur and bones of the voles."

pale buff, and the toes black. The beak is also black, and the ears, as well as the tufts of feathers on the head, are brown. The eggs are creamy-white in colour, and about $1\frac{3}{4}$ inch long by $1\frac{1}{4}$ inch in breadth. They are deposited on the ground in a nest scooped out of the earth, and lined with a little dry grass or moss. The nest is made generally in tufts of Heather or Furze, or in grassy spots. Sometimes it is found in marshy and fenny spots in reeds and rushes. Nests have been occasionally found in the Kentish marshes on little hillocks covered with rushes. From four to seven eggs are generally laid, but, as was shown by evidence before the committee cited above, as many as thirteen eggs have been found in a nest. Seebohm, in his *Far Countries of North America*, quotes Richardson to the effect that this species of owl lays as many as ten to twelve eggs.

The short-eared owl is much appreciated in Germany, where it is called the "moor," "fen," and "meadow" owl. It occasionally breeds in Germany, as in England, but generally arrives in September, and remains till March. In France it breeds in the Pyrenees, Charente Inférieure, Hérault, Tarn, Aude, and other Southern Departments, but not very extensively. Board of Agriculture, 4, Whitehall Place, S.W., August, 1897.

METHODS OF PROPAGATION.

(Continued from p. 227.)

THE Oleasters (Eleagnus) are easily increased by taking cuttings of the young shoots, inserting them in sandy loam under a bell-glass, keeping them moist, close and warm. Some of the Japanese species are very handsome, namely, *E. reflexa aurea variegata*, the foliage of which is persistent in ordinary winters, even without the protection of wall or fence.

Escallonia in all its charming varieties, is readily increased by cuttings of the matured young shoots, but the best result is obtained by the use of a hot-bed with a gentle and lasting bottom heat, the frame lights or hand-lights and bell-glasses being kept close till rooting has taken place. The potted-off plants should be placed in a cold frame, and shaded from strong sunshine till established, when shade must be dispensed with. Most of the species of *Escallonia* are Chilean, and only withstand our winters in the south and west; while inland, and in the north they require planting against warm walls or fences.

Forsythias. These plants are shrubs that do well in the open or on low walls, and are perfectly hardy. Cuttings made of the matured shoots strike readily in the open ground, but rooting requires a long period of time. When well rooted, plant them out in spring or early autumn in nursery lines, $1\frac{1}{2}$ foot apart.

Iciss are propagated from cuttings of the young wood, put under bell-glasses or hand-lights, in the case of the smaller and more delicate varieties. The cuttings strike more readily on gentle bottom heat. The Tree Ivies, and some others enumerated under that head, should be grafted on stocks of English Ivy. *Hedera helix* on which straight stout stems are made, in which form the plants are very useful decorative material, especially variegated forms, very nice for winter bedding in the open air.

Jasmines may be raised from cuttings of ripe one-year old shoots, which should be cut into lengths of 9 inches to 1 foot, severing them at a node, and inserting them in a prepared bed of soil, covered with a close-fitting hand-light, or with a bell-glass, the early autumn being the best time to take cuttings. These soon callus, and the following spring they form roots.

Honeysuckles, so useful as climbing plants, and equally desirable for the fragrance of their flowers, are easily multiplied from cuttings made of ripened shoots taken off in September, and inserted in the open ground, like Currant-cuttings; or they may be put into propagating-pans in a cold pit, where, by keeping them close and shaded about mid-day, they very soon make roots. As soon as this is effected, pot them singly and plunge in spent tan, sand, or coal-ashes.

Shrubs which may be struck from Cuttings.—Laurels in variety are often required in large quan-



FIG. 85.—DRACÆNA RUBRA BRUANTI: UNMANURED AND MANURED. (SEE P. 284.)

Turnip-fields. On one occasion a pair nested in hatching their young on an island which had been lying idle throughout the and spring. But this owl, being migratory, as a rule, breed in Great Britain; it leaves try at the beginning of the spring for many untries, so that, to use Seebohm's words, our islands its range is almost cosmopolitan. d in such different latitudes as the Sandwich Greenland. Sometimes, however, as ornitho-late, its nest is found in this country, especially where there has been an extraordinary of its favourite food—mice, voles, or rats. In ershire, for example, when there was a great 'mice in the forest of Dean, short-eared owls acted there in large numbers, and materially n destroying the intruders.

Departmental Committee appointed in 1892 board of Agriculture to inquire into a plague roles in the south of Scotland, say in their 'This bird (i.e., the short-eared owl), which uted over almost every part of the globe, is

The committee were of opinion that it would be difficult to condemn too severely the foolish and cruel action of those who allow or encourage the destruction of this useful and beautiful bird, and it was with much satisfaction that they were able to record that many landowners and game preservers had become convinced in late years that owls of all sorts are not only harmless to game, but most beneficial to agricul-turists, and had issued orders for their preservation. Seebohm also writes strongly on this point: he says, "Too often, however, the poor harmless owl is shot down by thoughtless farmers or ignorant gamekeepers, who foolishly imagine they are ridding the domains of a pest, although in reality they are taking the life of one of their most valuable friends."

The short-eared owl is from 14 to 15 inches in height. The female is rather larger than the male. The head, back, and wings are lightish-brown, with darker brown patches upon them. The wing feathers have an edging of light buff or fawn colour, and the under surface of the body is of this colour, with blackish markings upon the breast. The legs are

ties, and all are more or less easy of increase by cuttings of the young wood taken with a heel. The common practice in nurseries is to bed the cuttings in close rows on a north or east border, but small quantities may be raised by inserting similar cuttings round the rim of an 8-inch pot, putting the cuttings deep down that the base is about an inch off the crocks, and after watering the pots copiously plunge them in a cold frame in any light kind of material. Care should be taken that the soil never gets dry, or the young roots will perish.

Laurustinus, in all its varieties, may be struck in the same manner as Laurels, but it is advisable to lighten the soil by adding some sifted peat and sharp sand; but here, covering the pots with bell-glasses hastens rooting, although even then quite twelve months are needed in the process.

Deciduous species of *Viburnum*, viz., the Snowball, *V. opulus*, root readily as a cutting in the open border; and the sub-evergreen Chinese and Japanese species, *V. plicatum* and its woolly-leaved variety *lantanum*, as well as the American species, are raised from cuttings of the mature wood, where layering is not convenient.

Acuba japonica roots freely if the cuttings be taken in the autumn, as soon as growth is finished, the coarse pithy shoots being avoided, as these scarcely ever can be got to strike; and when this does occur, they make gawky-looking plants.

Buxus in variety roots easily, as cuttings taken in February and March, and inserted in soil surfaced with sand, well watered-in with a rose water-pot, and covered with a bell-glass. The cuttings should not be longer than 4 inches, 2½ inches being placed beneath the soil. The Minorca Box, *Buxus Balearica*, takes so long a time to root, that it is best to layer it; while *Buxus elegantissima*, and its variegated form, as well as the creeping Japanese Box, can be increased by pegging down the branches, and covering them with prepared soil so as just to leave the short laterals showing through the surface, and shading the bed with any convenient material, so as to keep the soil in a uniformly moist state.

Cytisus, which may be classed with shrubs, are raised from seed or cuttings, while the tree-forms of *Laburnum* are increased easily from seed, or by grafting on the common variety. The white-flowered species, called in nurseries White Portugal Broom, is one of the most pretty of summer-flowering trees, either on its own roots, or grafted standard high, and contrasted with the Spanish Broom (*Genista juncea*), or the rush-twigg'd Broom, makes a very telling subject in the shrubbery. This is easily raised by seed, or by means of cuttings of the mature shoots; or the young growth may be taken and struck under a bell-glass in a close pit. Thus treated, it is easy to strike all the low-growing forms of *Cytisus* and *Genista*, as *elongata*, *purpureus*, *nanus*, &c., as well as the lovely novelty lately introduced from the Balkan Mountains, and called, from the pass where it was found, *Schippkensis*. This, in its season, is covered with beautiful large white flowers, which, being terminally produced, makes it a fine plant for cutting and table decoration.

Desmodium and *Coronilla*, close allies of the Brooms, may all be propagated by cuttings of the young wood, taken just as growth is completed, either with or without a heel, inserted in sandy soil, and covered with a bell-glass; and the same may be said of the double-flowered Gorse, and the Spanish variety (*Ulex hispanica*), so useful as a decorative plant, or on the margins of shrubbery banks, while the double form of the Dyer's Broom (*Genista tinctoria*) strikes freely.

Deciduous Shrubs, as *Deutzia*, *Diervilla* (*Weigela*), *Hydrangea*, *Ribes*, *Philadelphus*, and most of the *Spiræas*, can be raised in the open from cuttings of stout, mature shoots, bedded-in close together in a north border, and protected from frost in the winter by cut branches of Spruce Fir, scattered over and among them. This should be done in early autumn, before all the foliage has fallen off, when, if the season be mild, they will callus and root freely in the spring, and be ready to "quarter up" in the following autumn.

St. John's Wort (*Hypericum*), the same may be

said of all these, of which perhaps *Moeserianum* and *patulum* are the finest of recent introductions. *Experience*.

(To be continued.)

THE HERBACEOUS BORDER.

MICHAELMAS DAISY "ELLA."

At the Shrewsbury show this year I was standing by, when an exhibitor of hardy-flowers was asked by a visitor, "What is the best Michaelmas Daisy?" He replied, "Robert Parker;" and considering that it nearly represents the best form of the original Michaelmas Daisy, *Aster Novi Belgii*, he was perhaps not far wrong. But as sponsor to Robert Parker, I was rather pleased with the selection. It is about twenty years since I found this plant growing in Robert Parker's nursery at Tooting, labelled *Aster amethystinus*, and I took it home and re-named it; and from my garden it has found its way to nearly every nursery in the kingdom. But about ten years ago, I found a seedling of which Robert Parker was evidently the seed-parent. It became *Matre pulchra* *Alia pulchrior*, and I named it "Ella." This, too, has found its way to most nurseries, and I consider it the best of its class. It is 6 feet high, and has much the habit of its parent, flowering about a week later. The flowers are better shaped, and have twice as many rays. When it first opens, the colour is little better than the slate-grey of *R. Parker*; but after a few bright days, especially if the nights are frosty, a condition favourable to the colour of nearly all the tribe, the rays acquire a rich glow of amethystine-purple, which lasts in successive flowers till severe frost brings the season to an end. *O. Wolley Dod*, *Edge Hall, Malpas*.

BETTESHANGER.

A PLEASANT journey from Ramsgate, on the Dover road, brings the traveller to Betteshanger, the seat of Lord Northbourne. The place is distant 5 miles from Sandwich. After leaving Sandwich, the road passes through extensive orchards of Damsons, Plums, and Pears, and farming-land, carrying in some places market-garden crops, on one farm, a 40 or 50 acre field was remarked, which had been planted with Potatoes, with Brussels Sprouts set out in the furrows.

Plums were not generally an abundant crop in any part this year; but although this district had somewhat suffered from spring frosts, its contiguity to the sea had served to mitigate the severity of the cold, enabling some cultivators of Plums to save half a crop certainly, and the fact of the fruit being scarce elsewhere, greatly enhanced the prices obtainable by growers in this neighbourhood and further a-field.

With the knowledge born of necessity, the fruit-cultivators when they came into possession of the land at once allowed the quick-set hedges dividing the fields, and bordering the high road, to grow upwards to a height, in some instances, of 15 feet, but without adding the least to their width. The hedges are rendered rigid by means of stout wire fastened to poles, to which the shoots are secured. These tall, thin ghosts of hedges were formed by these simple contrivances into capital wind-breaks without much cost.

The road for the last mile or so rises rapidly, with a sharp ascent into the park from the main road, passing through young plantations of mixed timber trees, Conifers and Oak predominating. The park itself possesses plenty of fine old trees, including many Oaks, which seem quite at home on the strong loam overlying the chalk. The surface is undulated, and most kinds of timber attains to large dimensions; and amongst Conifers remarked we may mention the Lebanon Cedar, which grows here with remarkable vigour. The Yew likewise grows with rapidity; and in this connection mention should be made of two Yews planted in the churchyard by Sir Walter James, the first Lord Northbourne, and Mr. W. E. Gladstone in commemoration of a visit the latter made to the place in 1857. In the forty years

that have elapsed, the then tiny trees have reached a height of 18 feet, the one with the stem diameter of 10 inches, Sir Walter's tree being slightly the bigger. A slate slab forms a seat between the two trees, and records the event in appropriate verse—fitting arboreal memorials to keep evergreen the memory of two celebrated men. The church itself is a small structure, that stands on the foundations of a very ancient one, and which has been rebuilt from the ground-level at the cost of the family. It stands on a knoll in the park at a short distance from the mansion, and is a strikingly ornate, abundantly-lighted building.

A tour of inspection with Mr. Salway, the head-gardener, as guide, showed that in the matter of flower-gardens, these were not, as is usual, confined to one, and that near the dwelling—but there were three or more. One of these is situated on a series of terraces, each terrace being planted differently, but in all of which tuberous Begonias, in mixed colours and double and single-flowered varieties, are largely employed. To serve as dot plants there were noted *Abutilon Thomsoni variegatum* and *Salvia patens* in large clumps. A draw-well, with handsome well-top and arch of ornamental hammered iron for supporting a pulley wherewith to hoist the bucket, is a conspicuous object in the middle of this garden. The intention was, of course, to furnish water for the supply of this particular garden; but as five men are required to work the pulley and manipulate the bucket, it is put aside in favour of more economical methods. On one or two of the terraces espalier Pear trees are planted by the sides of the grass-walks, the object being the attainment of the bright autumnal tints of the foliage of the Pear in union with the colours of the flowers in the beds, an object which is, we believe, seldom realised, the Pears persisting in dying off in the usual tints of yellow. Hardy herbaceous perennials were found in various parts to the exclusion of tender species, and already several borders and prominent corners are planted with these plants. They also fill two long borders in the kitchen-garden.

A garden of Roses is in contemplation, the species and varieties to be planted being those of robust growth, such as *Rosa rugosa*, in variety: Lord Penzance's hybrid Sweetbriar, Crimson Rambler, the Boursault, and Prairie Rambler, and Roses of this character. A garden planted after this kind would doubtless have a charm of its own for the short space of time such varieties remain in bloom; but unless there are beds of Teas and Noisettes to carry on the floral season till the autumn, it will, we should say, be devoid of interest after the chief flush of bloom has come and gone.

Most of the glasshouses are erected in and about the kitchen garden; a clump of houses, however, stands in the pleasure-grounds at about 100 yards distant from the house. This consists of a conservatory, a fernery, orangery, and a store-house for Myrtles. The conservatory at the time of our visit was enlivened with such annual plants as *Celosia pyramidalis*, *C. cristata*, Cockscombs, *Coleus*, *Pelargonium*, *Petunias*, and the like. The fernery is abundantly planted, and every plant was vigorous and healthy, the effect being natural and good. Rock-work is used to face the walks and furnish spots on which Ferns can be planted; and a pool in which goldfish disported beneath a tiny fountain, added a little life to the scene.

The Myrtles to which we made allusion above are big bushes of several stems, and chiefly remarkable from the fact that they have been raised from cuttings made from sprigs taken from the wedding bouquet of the present Lord Northbourne's mother. The bushes measure 8 feet in height from the tub, and average 6 feet in diameter of crown. Originally there were six of them, but these, from one cause or another, have been reduced to four. The orangery contained a number of Orange-trees of different varieties that fruit well every year.

Wall-fruits were plentiful this year, and very fine crops were noted of Pears, Peaches, Nectarines, and some varieties of Plums. The trees of all kinds, and especially the Pears, are magnificent examples of

good training, and some of them are 14 feet high, and 30 feet wide. The Peach-blister was very prevalent here, as in many other gardens. The Gooseberry-bushes had rendered a good account of themselves, for the crop had been enormous, and some varieties were still ungathered (August 25). There are several vineries containing good crops of excellent Grapes, and a wall-case for Peaches, of which enormous fruits of the pale-coloured Princess of Wales were remarked. The garden is well found in pits for forcing and plant-growing, and a few Orchids are cultivated successfully, as *Cypripedium*, *Calanthe*, *Dendrobium*, &c. It was a pleasure to observe how well Mr. Salway cultivates the now somewhat despised *Achimenes*, and to see capital *Gloxinias* so late in the year. The *Chrysanthemum* receives considerable attention, and numerous plants were remarked which were being grown for the production of specimen blooms. A stove was filled with a quantity of foliage-plants of small size, and it was evident that much indoor decorative work was done. We came away feeling that Betteshanger is a very charming, unconventional sort of garden, surrounded and embellished by noble trees, both indigenous and exotic, and ably managed by his lordship's gardener, Mr. Salway.

SECOND CROP OF OAK.

THE illustration (fig. 86) represents one of a number of examples of stoolled Oaks, that not long since existed in the Wharfedale Woods. I had it left as an example where one of the railway fires had ravaged the wood. The tree has been scorched several times by fires, and one limb was so charred that it had to be cut off. There were six poles on the stool originally. I consider the tree a good example in its way. The old stool shows that a big tree had been cut from it, and the second (present) crop of poles shows very well how clean and straight they grow up in a dense wood, as was once the case, where the tree stands. Such Oak poles are very saleable, and fetch about 10d. per foot standing at the present time, and sometimes more. Such straight clean examples rive well for spokes for wheels, and are bought for "spoke-wood." I once saw on the continent some hundreds of acres of such stoolled Oaks, but from three to four poles to a stool was the maximum; they were fine, however. *J. Simpson, Wortley.*

FORESTRY.

I THINK that a good deal of nonsense is sometimes talked about the management of German forests, as if it could be generally adopted with advantage in England. In the case of many kinds of trees, to grow them close together would be most wasteful; for instance, I see Spruce Fir quoted as a tree to be so grown. What does anyone suppose that a wood so grown for forty or fifty years would be worth an acre? I remember such a wood here, forty or fifty acres, forty or fifty years old, that had never been thinned, and as clean as a German forest. The great gale of January 7, 1839, blew the whole of them down, not up by the roots (they might then have been worth something, though very little), but broke them all off in the middle, so that there was nothing left to pay the expense of clearing the ground. But let no one imagine that under any circumstances, or at any age, such a wood could have paid. English-grown Spruce is good for very little; even Norwegian white deals, grown in a totally different manner on mountain-sides, are hardly fit for building-purposes; but the wood I mention never could possibly have paid a tenth-part of what it would have cost, in planting and rent of land and interest. So again, the Beech-forests they describe; if such were grown in England, they would pay nothing at all for fifty or sixty years, whereas the Buckinghamshire Beech-woods (which are natural forests, and managed as such) pay, I believe, 8 or 10 per cent. an acre yearly. Then to grow Oak unmixed is most wasteful. Young Oaks are good for nothing—remain so until there is 4 or

5 inches of heartwood. At what age will an Oak-wood pay for planting, cost of management, rent, and interest? One thing seems to be forgotten entirely, which is, that given a certain quantity of timber, produced per acre, the fewer the number of trees that produce it, the greater the value of the



FIG. 86.—SECOND CROP OF OAK.

timber produced; besides which, I have no doubt (although it would not be easy to prove it) that the amount of timber produced by trees so close that there is only a flat surface of foliage at the top, is considerably less than when each tree has a cone of foliage for, say, one-third of its height, and had a bare stem for two-thirds of its height. No doubt, most woods in England might be better managed—every

different kind of tree, and every different mixture of trees requires a different management; but we shall not make them pay by trying to imitate what no doubt pays on the mountains of the Black Forest. *C. W. Strickland.*

VEGETABLES.

VEITCH'S EXTRA EARLY FORCING CAULIFLOWER.

Of this capital variety I grew one year nearly 400 plants in 7-inch pots, sowing the seed on December 20. The first heads were fit for cutting in the first week of April; and afterwards the stumps produced strong sprouts. Those plants on which sprouting occurred were planted out of doors, and gave four compact Cauliflowers at the beginning of June. It is a capital variety to withstand drought, remaining fit for use longer than any other variety that I have grown, excepting Autumn Giant. I have grown it extensively for four years, it being the Cauliflower for a gentleman's table, the heads being quite white, close in texture, and agreeable in flavour. *W. Davies, Nidd Hall Gardens, Yorkshire.*

CULTURAL MEMORANDA.

ALLAMANDAS.

I FIND that Allamandas are plants easy to grow when given a sunny position in a stove, and the shoots trained thinly on a trellis. If grown in a border, this should consist of sound fibrous loam, coarse sand and leaf mould, about four-fifths of the first to one-fifth of the last-named ingredient; and, of course, the drainage should be efficient. If the border be well made, it may even form part of the path, and be much trodden upon without any ill effects to the plants. After a few seasons succeeding the planting, when the soil is giving out, liquid-manure should be afforded during the summer. This manure may consist of fresh sheep-dung and soot, stirred together in a barrel, and allowed to clear before being used. Any artificial manure that may be applied in the absence of the former, should consist of very mild doses at long intervals of time, injury to a plant soon following excessive use of these things. Allamandas should be kept rather dry at the root in the winter season, but not so much so as to cause shrivelling of the shoots. I prune our plants somewhat hard back in the early spring. Cuttings root freely at almost any season in a brick bottom heat. During the early years of an Allamanda's life, the soil used for them may be rather lighter than is advisable in a border or flowering-pot. When the flowers only are used in decorations, they should be placed in water two hours before mounting them, afterwards securing them to bits of smooth shaven sticks, with a little bunch of moistened cotton-wool at the base, and they will keep fresh for some length of time. *H. Markham, Northdown, Margate.*

THE FORESTRY SCHOOL AT NANOY.

THE pupils of this school, which may be called a technical university, are recruited from the pupils of the Institut National Agronomique of Paris. About twelve students are admitted every year, each pupil receiving an annual honorarium of 1,200 francs (£48). The total number of externe pupils since the foundation is 308, of whom 34 were French, 83 English, 56 Roumanians, 39 Poles and Russians, 38 Belgians, 20 Swiss, 40 Luxemburgers, and 10 Portuguese. The number of French students (internes?) is given as 1394. The forestry museum is situated in a garden which, though unpretending, forms a great contrast to the adjacent botanic garden in the Rue Catherine. The museum contains minerals and other geological specimens, illustrations of woods of many kinds, showing their natural structure, the effects of various in-

juries and fungal diseases, the modes of cutting timber to advantage, and of utilising it in various ways. The museum seems to be organised in an excellent manner, and next after Kew is the best of its kind we have seen. At one time students destined for the forest service in India were allowed to avail themselves of the excellent academic training given here. The establishment of the forestry school at Cooper's Hill has rendered this less necessary than formerly. Not far from Naney is a vast area of woodland, where the practical teaching of forestry is carried on.

THE WEEK'S WORK.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoo Park, Luton.

Herbaceous Calceolarias.—These beautiful plants should now be slowly growing in 48's and large 60's, and be similarly treated to the Cinerarias; both detest fire-heat, and should not be exposed to it unless the weather is so severe that they can no longer be properly ventilated and exposed to sunlight in cold-pits. Keep them near to the glass. In the warmer parts of the country, especially near the coast, Calceolarias are admirably grown in low pits and ordinary frames till such time as they show flower after being shifted into their flowering-pots at a later date. No stimulus to growth is needed by them whilst small, that is, if the potting-soil be of the right sort; and they should not lack water at the root.

Camellias.—These plants, whether growing in pots or planted out, should at this season be kept well supplied with water at the roots, or the buds will drop. The leaves may be sponged with Fir-tree oil, mixed with rain-water in a wooden pail of the strength recommended by the makers. This will kill white-scale, which in some gardens is very prevalent on these plants, and which secrete themselves about the axils of the leaves, and round the flower-buds. Camellias, if very thickly set with flower-buds, should have some of them thinned off, one or two good buds on a shoot being sufficient. Keep the house cool, and afford the plants nothing that will cause them to grow.

Chrysanthemums.—Excepting in the case of those which will flower the latest, the use of manure-water, &c., should be discontinued. The side-shoots should be removed whilst quite small, and water should be afforded in sufficient quantity to moisten the soil throughout. If mildew and damping-off occur, the plants must be examined every morning, dusting the leaves with flowers-of-sulphur for the mildew, taking care this is thoroughly done. If damping of the early flowers is noticed, the air of the house must be kept drier, air being admitted freely when there is no fog or rain. When Chrysanthemums are stood on Peach-house or viney-borders, damp is sure to prove troublesome. As a means of checking the evil, pots or pans containing large lumps of unslaked lime should be placed at intervals of 6 feet, replacing the lime with fresh as soon as it gets slaked with moisture.

Tuberose.—As these bulbous plants commence to open their flowers, all the light possible should be afforded them, and the plants placed almost close to the glass. The temperature of the pit or house may be kept at 60° by night, and 65° by day, syringing the lower leaves in fine weather, in case red-spider should seize upon them.

Bulbs.—Let all sorts of Dutch bulbs be examined about once in ten days, removing from the coal ashes those that have made a considerable growth of roots, placing them in a slightly shaded frame, the forwardest, if desired, being placed in a forcing-pit.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Selecting and Ordering Fruit Trees.—Orders should be prepared for fruit-trees to replace unproductive orchard, wall, or espalier trees, or to plant in new positions. Lack of fertility in the trees may be due to one or several causes: the trees may have become too old, or they may have been neglected, or the soil is impoverished, or the trees were planted in unsuitable land. In the case of aged trees, or trees that are barren through the roots having reached uncongenial soil, root them out, and plant in their stead clean, healthy, vigorous trees of sterling varieties. Young

vigorous trees may be unproductive through neglect, and the branches may have become infested with lichen. In a future Calendar reference will be made as to the best practical method by which to treat such. In the meantime, a list of approved varieties of the several kinds of fruit to grow may prove helpful to many new readers of the *Gardeners' Chronicle*.

Apples.—Dessert: Mr. Gladstone, July Pippin, Red Juneating, Beauty of Bath, Lady Sudeley, Irish Peach, Devonshire Quarrenden, Kerry Pippin, Worcester Pearmain, Red Astrachan, Blenheim Orange, Cox's Orange Pippin, Margil, King of the Pippins, Ribston Pippin, Bowhill Pippin, Cockle's Pippin, Peasgood's Nonsuch, Mannington Pearmain, Old Nonpareil, Claygate Pearmain, Beauty of Kent, Rosemary Russet, Fearn's Pippin, Court Pendu Plat, Sturmer Pippin, Hornmead's Pearmain, Lord Burleigh, Duke of Devonshire, Golden Reinette, May Queen, and Boston Russett.

Apples: Culinary.—White Transparent, Early Julien Keswick Codlin, Duchess of Oldenburg, Lord Suffield, Pott's Seedling, Cellini, Lord Grosvenor, Northern Dumping, Ecklinville Seedling, Stirling Castle, Emperor Alexander, Frogmore Prolific, Golden Spire, The Queen, Gascoyne's Scarlet (a grand new Apple), Peasgood's Nonsuch, Blenheim Orange, New Hawthornden, Lord Derby, Golden Noble, Bismarck, Warner's King, Striped Keeping, Mère de Ménage, Royal Jubilee, Wellington, Lady Henniker, Lane's Prince Albert, Annie Elizabeth, Hambling's Seedling, Newton Wonder, Northern Greening, Norfolk Beaufin, Sandringham, Hambledon Deux Ans, and Duke of York.

Pears.—Beurré Giffard, Early Benoist, Doyenné d'Ete, Jargonelle, Souvenir du Congrès, Clapp's Favourite, Williams' Bon Chrétien, Beurré d'Amanlis, Eyewood, Durondeau, Marie Louise, Pitmaston Duchess, Beurré Superfin, Conseiller de la Cour, Beurré Diel, Doyenné du Comice, Easter Beurré, Zephirin Gregoire, Josephine de Malines, Glou Morceau, Le Lectier, Beurré Rance. Stewing Pears, Catillac and Uvedale's St. Germain.

Plums.—Rivers' Prolific, Dennison's Superb, Old Green Gage, Orleans, Kirk's Blue, Washington, Jefferson's, Coe's Golden Drop, Golden Transparent (Culinary), Belgian Purple, Rivers' Czar, Grand Duke, Prince of Wales, Victoria, Monarch, and Pond's Seedling.

Cherries.—Bigarreau Amber Heart, Bigarreau Frogmore Prolific, Early Rivers, White Heart, Black Heart, Black Tartarian, May Duke, and Morello.

Peaches.—Early Alexander, Waterloo, Hales' Early, Early Grosse Mignonne, Diamond, Crimson Galande, Violette Hâtive, Royal George, Prince of Wales, Princess of Wales, and Sea Eagle.

Nectarines.—Early Rivers, Lord Napier, Elruge Pine-apple, Dryden, and Homboldt.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Late French Beans.—Where seed was sown in beds in cold pits or frames for furnishing a late supply of Beans, air should be admitted whenever the weather is favourable for doing so, and in such volume as to ensure its circulation among the plants. As long as the present mild weather lasts there will, of course, be no difficulty, but it is during frost that much greater care will be required. At night, let the glass be covered with mats, double or single, as may be needed; or, failing these, with dry litter or bracken. Plants left to ripen seed may now be pulled up by the root, tied in bundles, and hung in a dry, airy shed till dry, the thrashing or shelling-out the seed being reserved for winter work. Pods left on Runner Beans may be gathered and spread out thinly in a warm pit or on a greenhouse stage, so as to become thoroughly dry before being put into the seed-room, shelling-out being done in bad weather.

Cauliflower.—Such Cauliflower plants as are not yet forming heads may be lifted on the approach of frost, and planted rather close together in a cold pit or frame, and have plenty of air afforded in the daytime, and protection at night. By such means, and if they were lifted with a ball, useful heads may be secured for weeks or months after the outdoor supply has come to an end. Young Cauliflower plants planted in hand-lights or in frames should be hardly treated, not coddled, coverings being put over the glass only in the event of very hard frosts being experienced. Autumnal frosts do no harm, and it is

scarcely necessary to use the frame-lights or the tops of the hand-lights if these be removeable, unless during heavy rains. Dust quicklime, or lime and soot, on the soil between the plants, and hunt for slugs, and stir the surface once a fortnight.

Onions.—The autumn-sown Onions are now growing somewhat freely, and will need thinning pretty severely, the bed hand-weeded, and the surface loosened with the hoe whenever it sets after a fall of rain, a battered surface not being conducive to progress. If young Onions are often required in salads in winter, a pinch of Onion-seed should be sown in a box at intervals of two or three weeks, the box being placed in a Cucumber-pit or warm greenhouse till germination takes place, and then removed to a shelf near the glass in a slightly cooler place. A good variety for sowing is the Silver-skin, it being mild in flavour, and nice in appearance. If exhibition bulbs are required next year, a piece of ground should now be selected, on which the crop may be grown. Some soils are adapted for growing Onions with but little preparation beyond deeply digging, and leaving the surface rough during the winter; but most soils require to be trenched two or three spades deep, according to depth of staple, and to have incorporated with each layer good farmyard-dung in considerable quantity; and should the subsoil be stiff and retentive, coal-ashes, burnt garden-refuse, and the rougher parts of the garden-dunghill may be put evenly into the bottom of the trenches.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

The Pinery.—The plants, if they are not already placed in their winter quarters, should now be arranged as previously advised, keeping the plants with ripening fruit and those which will soonest succeed them at the cooler end of the fruiting-house; and those in the intermediate stage should be put together at the warmer end. Afford the fruiting plants water but sparingly, but let it be sufficient to thoroughly soak the ball, as dryness in the soil at this stage will stop the development of the fruit, and cause premature ripening. The plunging materials, if these consist of tree-leaves or bark, will doubtless require partial renewal, and so much new material as may be considered necessary to keep up a bottom-heat added to the old, and well mixed with these. The top-heat may range from 80° to 85° by day, and 70° to 75° by night.

Succession-houses.—Those plants which will be started early in the new year should now be at rest, and receive very little moisture at the root, but not kept so dry as to induce premature fruiting; the temperature of the house should be allowed to drop to 70° to 75° by day, and 60° by night; the bottom-heat being kept at about 75°. One damping-down daily will suffice, and there must be no overhead syringing. If these plants are plunged into a firmly-made hot-bed which is not permitted to get warmer than the figures given, not much will remain to be done till the time to start them arrives. Later successions will have nearly or quite completed their growth for the season, requiring much the same kind of treatment as the others, always taking care that they do not get too wet after being dry, and then excited a little, or they will all or many of them throw up before their time. These remarks apply particularly to Queens. Most of the suckers will have finished growing, and moisture and warmth may be gradually reduced, in order to lessen growth at the duldest part of the year, and prevent drawing. Do not keep suckers crowded together, but let them have space, and be placed close to the glass without actually touching it. If any variety is scarce, and strong suckers are available, they may be potted and plunged round the edge of the bed, in the fruiting division, as elsewhere, if a bottom heat of 90° be available. Keep the glass as clean as possible, and put a light covering over the roof on frosty nights, in order to keep up the temperature, and prevent moisture condensing on the glass.

Strawberries.—See that all plants are plunged in leaves or coal-ashes, as well as protected from rain. Where very early fruit is required, a start should be made forthwith, remembering that by introducing plants into mild heat, more plants are required for furnishing fruit at an early date than later. Have the forcing-pits and houses thoroughly cleaned, and select the best-ripened of those growing in 48's, washing the pots, and cleaning the surface of the soil, and the crowns; afterwards dipping each plant overhead into a mixture of water 3 gallons, soft-soap 2 oz., and flowers-of-sulphur 2 oz. The plants

may be stood on boards placed on a firm bed of fresh tree-leaves to start, taking care that the leaves have been well mixed together, and space is left under the lights for the escape of the moisture generated by the fermentation of the leaves. The degree of warmth may not at the beginning exceed 45° by night, and by day 50°. Top-heat from hot-water pipes will not be necessary at this season if a leaf-bed be employed, and the plants may stay in this pit till they show flower. Water must be very carefully applied, for owing to the damp surroundings, the evaporation of water from the soil will be very small in amount.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorset.

The East Indian-house.—The beautiful and rare species *Bollea coelestis*, B. Lalandei, B. Patini, *Pseudestrea cerina*, P. Rozzli, P. Klabochiana, P. Lehmanni, *Batemanniana* Burti, B. Colleyi, and *Hemiteya meleagria*, now making growth freely, should be placed at the coolest end of this division. To be successful with these, the air around them should be kept moist allways, and the compost never allowed to become dry. At Burford the plants are placed upon shallow pans, and a layer of sphagnum moss about 3 inches thick between the sides of the pots, so that in time a bed of living sphagnum-moss forms. Notwithstanding moisture thus afforded, the undersides of the leaves become infested with red spider, which causes the foliage soon to turn yellow and drop off, if not freed from the acarid betimes. The north side of the house, where plenty of light is obtained, is a good place for these plants, for in no case may they be exposed to direct sunshine.

Deciduous Calanthes will soon be coming into flower, rendering it advisable to discontinue affording the plants manure water, clear rain-water being alone afforded when water is needed. When the flowers begin to expand, the amount of water should be gradually lessened, and withheld entirely by the time half of them are unfolded. These plants may be exposed to full sunshine, in order to ripen the new pseudo-bulbs, and that the colours of the flowers may be clear and distinct. As the plants mature, the tips of the leaves turn brown, and although this is unsightly, the brown parts must not be removed. The foliage must not be so placed that it touches the roof-glass, as changes in the night temperature are soon felt by the plants, causing the foliage to turn black and fall prematurely. The temperature for *Calanthes* should be kept at 65° till half of the flowers have expanded, when a drop of a few degrees is beneficial.

Epidendrum bicornutum.—This pretty plant should now be growing freely, and occupying a place at the warm part of the house. Avoid placing it, or *Galeandra devoniana*, near the roof-glass during cold, frosty weather.

Grammatophyllum Ellisii.—Plants which have made their growth may be removed from the warmest to the coolest part of the house, and afforded just enough water at the root to prevent shrivelling during their rest.

Phalaenopsis.—The species *P. Schilleriana*, *P. amabilis*, *P. grandiflora*, *S. Stuartiana*, *P. leucorrhoda*, and *P. Sanderiana*, being now comparatively at rest, although still making roots freely, require careful attention in the matter of affording water at this season, an excess being dangerous to their health. The sphagnum-moss should be allowed to become crisp on the surface, and of a whitish colour before affording water, and dipping the basket, &c., should now not be practised; rather sprinkle the sphagnum and the sides of the basket with a fine rose-can, allowing no water to get into the centre of the growths.

Cattleya-house.—The *Pleiones* (or Indian *Crocuses*) are now making a pretty display in this division, and in order to have them in good condition for as long a time as possible, no water should be afforded at the root, or any moisture allowed to fall on the blooms. *Pleione*-flowers last longest when the plants are used for indoor decoration, the dry air of a room conducting likewise to the giving of the plants a short rest.

Vanda.—The tricolor and *suavis* sections of *Vanda* will soon require repotting, &c.; and during the coming week it will be advisable to let the plants get moderately dry at the root, they being in that state less liable to receive a check, and more easily managed.

Odontoglossum citrosimum.—This plant is fast forming new pseudo-bulbs, and needs a place near the roof-glass of the Cattleya or intermediate-house, where there is full exposure. The more backward plants may be placed in a light, airy position in the East Indian-house. From the time the new pseudo-bulbs begin to form, afford the plants plenty of moisture at the root, till growth is fully made up; encourage early growth, in order to ripen it properly before the winter commences.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Herbaceous Borders.—The perennial *Asters*, or *Michaelmas Daisies*, are the chief attraction during the present month. The flowers are attractive in a cut state, and they are not injured by slight frosts. These hardy plants require only a moderately good soil and applications of water during dry summer months, and they are sure to give satisfactory results. The stock may be increased by division as soon as the plants have flowered, or if allowed to remain until the spring, they may be readily propagated in quantity from the young growths that are then thrown up. While the majority of the plants are still in flower, examine the stock with a view to the selection of the best and most distinct varieties, that the rest may be discarded. The following list includes a good selection of early, mid-season, and late flowering varieties:—Early: *acris*, dark lilac, very free and compact, 2 feet; *Amellus major*, deep violet, one of the best, early and dwarf, 2 feet; *cordifolius*, soft mauve, graceful, 2½ feet; *Novi Belgii* Harpur Crewe, good white, 4 to 5 feet; *Purity*, white, 5 feet; *lævigatus*, rosy-pink, dwarf and compact, 2 feet; *lævigatus Orion*, a slightly deeper-coloured form than the preceding. Rather later are *Nancy*, pale blue, very good, 3½ feet; *John Wood*, white, 4 feet; *N. B. densus*, soft blue, compact head, 3 feet; *lævia*, deep blue, 3½ feet; *Arcturus*, dark stems with lilac flowers, good, 3 feet; *vimineus*, small starry white flowers, very good, 3½ feet; *Robert Parker*, soft lavender blue, 5 feet; *James*, white, 4 feet; *punicus pulcherrimus*, bluish-white, a strong grower, 5 feet; *ericoides*, small, white, 3½ feet; *cordifolius Diana*, a beautiful variety, bearing graceful sprays of soft lavender flowers, 4 feet. This variety should be planted where slight shade is afforded, in summer the foliage being injured by bright sunshine. Following these are *Flora*, pale rosy-lilac, 4 feet; *paniculatus*, W. J. Grant var., pale lilac, 4 feet; *diffusus horizontalis* and *d. pendulus*, 2½ feet; *Archer Hind*, soft blue, 3 feet; and *Maia*, rosy-lilac, 4 feet. Latest of all are *Tradescantii* and *grandiflorus*, the former having small white flowers and handsome foliage, height 5 feet; and the latter large purple flowers, 3 feet.

Storing Dahlias, &c.—Where it is not convenient to lift *Dahlia* tubers at once, the tops may be cut away to within 8 or 10 inches of the ground, and eventually a fine day should be chosen to lift them. When lifting them, all the soil should be shook away, and the labels securely fastened to the roots with small tarred string or thin wire. It is good practice to temporarily store them for two or three weeks in any spare frames, laying them upside down to allow all moisture to dry out of the stems; they may be afterwards stored in any cool place that is secure from frost. Choice varieties should be kept in boxes, where they may be given special attention. Failing a better position, the general stock may be safely stored under plant stages holding bedding *Pelargoniums* that require little water during winter, where, if well dried before housing, they will take no harm from the slight drip during the winter months. *Cannas*, *Hedychiums*, *Marvel of Peru*, and *Salvia patens* may be similarly stored, but the tops of these should be only partially cut away at present.

General Work.—*Heliotropes*, *Coleus*, or other tender plants, that have become injured by frost, should be cleared away. A beginning may be made to dip and re-plant with spring-flowering or foliage-plants to be used for winter and spring decoration. Summer-bedding *Violas* should be trimmed of the longest flower-growths, and if the plants are allowed to remain, they will bloom freely in early spring. Where blue or purple varieties have been used in mixture with variegated *Pelargoniums*, the latter may be removed, and yellow *Wallflowers* or white *Hyacinth* bulbs be substituted; while *Myosotis dissitiflora*, *Nemophila insignis*, or similar subjects, may be associated with white-flowered *Violas*. All *Daffodils* and early-flowering bulbs should now be put into the ground as soon as possible. Box-edgings may be re-

laid at this season, or during the next week or two, if it is necessary to relieve the pressure of work which occurs in the late spring months.

THE APIARY.

By EXPERT.

The Feeding of Bees.—Winter is not far ahead, and before long the sugar-candy pot will be bubbling in many a beekeeper's kitchen. But those of us who, like the writer, are bound to keep their apiary within moderate limits, must have been obliged after this swarming summer to join up stocks, and they will now perhaps possess more stored combs than they care to keep through the winter, useful as a few such combs will be to them next spring. In that case, candy is not wanted, seeing that as good if not better results can be got by using the spare combs in a manner I will now describe, mentioning however, as a proviso, that, although the quality of the honey is of small consequence, and the presence of pollen in the cells in reasonable quantity is no objection, the comb itself must be such as you would care to retain in your hive brood-nest. Take two empty frames, call them top and bottom respectively; tack a piece of thin board to the side bars of the top frame, so that one face is quite or pretty nearly covered over. Put the bottom frame flat on a table, then the comb frame accurately on top of it, and on the top of that again, the top frame boarding upwards; twist pieces of frame-wire round the frame ends and bottom bars, so that the frame will keep in position. Here then is a snug honey-box with stores in the middle and a winter passage below, so that the bees can move about or cluster as they will. Place it over the brood-nest, and cover with soft quilting material of any kind available. If the brood-nest is very big, the honey-box can be placed transversely; but probably it will be better to place it so that frame-ends cover frame-ends, to which there is no practical objection if the quilting be properly seen to. Having done this last winter, I left the hive alone till the middle of March. On inspection I found that the honey had been consumed; while the comb contained brood on both sides. Three snips of a big pair of scissors set the brood-frame free, and it was at once lowered into place at the back of the brood-nest, which still contained a good supply of stores. After results quite justify me in recommending this method of wintering to such as have combs at their disposal.

Making Hives Secure for the Winter.—Before packing down for the winter, scrape the tops of the hives well, removing every irregularity in the shape of brace-combs or propolis. When all is smooth and straight, give a puff or two of smoke to drive the bees down, and pass a hand-brush rapidly over the top bars. Any scrapings which fell down between the combs can be cleared away when cleaning floor-boards, which latter job I defer till the tops have been seen to; and I would here urge a precaution—do not interchange floor-boards indiscriminately. We have known disease to be spread in this way through the operator being unaware of the presence of foul brood in his apiary. Destroy any quilts that have been propolised and worn out, and arrange top coverings of frames neatly, using some means to keep them close down at the sides. Not fewer than three or four layers of carpet, felt, or clean, dry sacking, should be used when the cork-dust cannot be had. But a few inches deep of the latter material in a box with a bottom of calico, laid on a single piece of carpet or flannel, makes a better winter cover than several layers of carpet only. So long as the bees continue foraging, and prowling about hive entrances other than their own, in autumn, all doorways should be contracted to less than an inch in width, but as soon as the robbing instinct passes away, entrances may be enlarged to 5 or 6 inches, and kept so during the entire winter, only reducing in cases of keen winds and drifting snow. Nothing tends more to keep bees in health than plenty of air in damp or muggy weather. In conclusion we need only urge that roofs be made watertight, stands secure against storms, and all means to keep stocks perfectly quiet and undisturbed during the winter months.

GIRTH OF TREES.—From the current number of *Notes and Queries* we take the following:—"A Willow near the London stone at Chertsey Lock has lately died, after much previous injury by wind and flood, which I believe to have been the largest Willow known. The stump has been measured by Mr. MARSH, the lock-keeper, as 18 feet 4 inches in circumference. D."

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY,	Oct. 26	Royal Horticultural Society's Committee.
SALES.		
MONDAY,	Oct. 25	Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Nurseries, Sunningdale, Berks, by Protheroe & Morris (three days).
TUESDAY,	Oct. 26	Bulbs, at Protheroe & Morris' Rooms. Continental and other Plants, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 27	Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Cambridge Nursery, Bewlsh Hill, Upper Norwood, by Protheroe & Morris (two days).
THURSDAY,	Oct. 28	Bulbs, at Protheroe & Morris' Rooms. Continental and other Plants, at Protheroe & Morris' Rooms. Nursery Stock, at Hollamby's Nurseries, Groombridge, Tunbridge Wells, by order of the Executors of the late Mr. Edwin Hollamby, by Protheroe & Morris (two days).
FRIDAY,	Oct. 29	Bulbs, at Protheroe & Morris' Rooms. Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—47°.

ACTUAL TEMPERATURES:—

LONDON.—October 20: Max., 62°; Min., 47°.

PROVINCES.—October 20 (6 P.M.): Max., 59°, South-west Ireland; Min., 51°, Aberdeen.

Weather generally fine, foggy in places.

Forest
Reservation.

It is with great concern that we read the following passage in a recent number of *Garden and Forest*:—"Emboldened by the action of Congress in practically revoking Mr. CLEVELAND'S Forest Reservation proclamations, and by the attitude of the administration toward the whole subject of our western forests, the lumbermen now controlling a large block of big-tree forest on the western slope of the Sierra Nevada, in California, are making a determined effort to obtain from Congress authority to cut the Sequoia timber in the General Grant National Park. This particular portion of the Sierra Reservation includes about 1,500 acres, and is covered with an exceptionally fine growth of Sequoias and Sugar-Pines, numbering among its vegetable wonders the great tree known as the 'General Grant.' . . . It is unnecessary to remind our readers that these Sierra Sequoias are marvels of the vegetable kingdom, unsurpassed in grandeur, and probably the oldest living organisms on the face of the globe. Every individual is a monument which should be sacredly preserved for the benefit of future generations. To cut down one of these trees is a crime, and it should be a matter of national humiliation that a considerable part of the Sequoia forest has been allowed to pass from Government control into the hands of lumbermen. There was no excuse for this; there would be less excuse in allowing those portions of the Sierra forest which have already been reserved for the benefit of the people to be opened to entry. The lumber, even, is not needed by the community, which can be

abundantly supplied from the Redwood forests, and no one but a little group of men who expect to make money by this transaction has any interest in the success of this movement."

The West India
Royal Com-
mission.

BLUE-BOOKS, as a rule, rarely come under the cognisance of the general public, and when they do, they do not always prove agreeable reading. They are frequently crammed with details imperfectly summarised, and many of them irrelevant or of subsidiary importance only. Often, too, they are filled up with formal communications recording (let us say by way of illustration) the fact that a clerk in the Circumlocution Office has been directed by his superior to forward to the superintendent of the brick and tile department a scheme for the manufacture of bricks without straw, and to request that the superintendent will favour the superior with any observations on the scheme that may occur to him. The letter is of course acknowledged with more forms and ceremonies, and in due time the superior is made acquainted with the opinion of the superintendent. All this is no doubt very methodical and business-like, but it has no interest for the public, and it is surely a great waste of time and money to print these office details.

A report of the West India Royal Commission now before us is less open to this kind of criticism than similar productions sometimes are. It contains an account of the issue of the Commission, a clear statement of the work it was desired to accomplish, and an equally lucid report of what was done by the commissioners. The main subject of enquiry had reference to the condition and prospects of the Sugar Industry in the West Indies. From well-known causes, to which it is not our purpose to allude in these columns, the growth of Sugar-cane and the manufacture of sugar in the West India Islands is now being carried on under such depressing conditions, that there is reason to fear that the cultivation of sugar will be abandoned, and a very large section of the population thrown out of employment, and left without means of subsistence. The commissioners used all diligence, but we fear it must be said they have not told us much that was not known before. The suggestions they make, so far as they are of a political nature, must be left to the consideration of politicians and statesmen.

In these columns we are concerned chiefly with the question as to what substitutes for Sugar-cane can be provided, and more especially as to what plants can be profitably grown in addition to the cane. There can be no doubt that one of the principal sources of the disastrous condition in some of the West India islands arises from the exclusive cultivation of Sugar-cane. To use a homely phrase, the planters have put all their eggs into one basket, and are now suffering the consequences of their lack of foresight. What then can be done now to remedy this state of things? The answer is by no means wholly unsatisfactory, though time will be necessary to secure the desired ends. The remedy is to supplement sugar cultivation by the addition of other tropical products of which there is an abundance, selecting in each case those which are adapted for particular localities and special requirements. Tropical fruits, Oranges, Pine-apples, Yams, vegetables, spices, perfumes, drugs, dyeing materials, Rice, Arrowroot, endless varieties of fibre-plants, Cotton, Cinchona, Coffee, Tea, Cocoa, rubber, Lily-bulbs, Orchids,

and many other things might be tried according to circumstances. To some extent this has been done, and Jamaica has already a very large fruit-trade with the United States. In some cases trial has been made, but from one cause or another, the venture has not proved profitable. Of course, the cultivation of many of the subjects above-mentioned must be at first experimental, and to secure the success of experiments, experiment stations, directed by competent men, and well provided with all the necessary plants, must be established where they do not already exist.

And this reminds us of the valuable services which Kew has rendered to the colonies since it has existed as a public institution. No sooner was Sir WILLIAM HOOKER installed as Director in 1841, than he began that series of varied labours in the interest of the colonies, which has been carried on by successive Directors with ever increasing energy to the present time. Of late years, in addition to the larger botanic gardens in Jamaica, Trinidad, and British Guiana, which are in direct communication with Kew, and which have always been centres for the growth of economic products and sources whence useful knowledge relating to them was diffused, smaller botanic stations have been established in the scattered islands. To the further development of these we may confidently look for the amelioration of the existing state of things. These stations were established at the recommendation of the authorities at Kew, who devised the scheme of operations, provided the material and furnished the superintendents in the shape of young gardeners trained in the Royal Gardens. In the report before us, the commissioners urge the formation of a special department to supervise, concentrate, and direct into useful channels the work of these several stations, and generally to promote economic botany and agriculture. The department should, according to the suggestions of the commissioners, be directed by a competent officer to be paid by the Imperial Government. This official might organise and supervise educational efforts according to the needs and capabilities of the several islands. Whether such an officer is really needed, it is for those on the spot to determine. It might be thought that one or the other of the existing superintendents, with their long experience and varied information, might suffice, and the garden under their charge be made, to a greater extent than at present, the headquarters of economic botany for the islands. Owing, however, to the distance of one island from another, and the relatively little communication between them, it will be necessary to multiply the stations and increase the number of superintendents. The commissioners estimate the annual cost for the botanic department, scientific agricultural education, and subsidies for steamers plying between the islands and the United States for the conveyance of fruit, &c., at £27,000.

A valuable analysis of the report prepared by the secretary enables the reader to refer readily to any special point, but the most valuable appendix is that drawn up by Dr. MORRIS, the Assistant Director of the Royal Gardens, Kew. Dr. MORRIS, who is specially qualified by early training at Kew, and subsequent experience in Ceylon, Jamaica, Honduras, and other colonies, accompanied the commission in the capacity of technical adviser on botanical and agricultural matters, and he now, within the limits of the work of the commission, furnishes us with an exhaustive treatise on tropical cultivation, and sketches the work already done by FAWCETT, HART, JENMAN, and other botanists in their

several establishments. Chemical analyses by Professor HARRISON, Messrs. D'ALBUQUERQUE, BOVELL, and others, have resulted in an increased production of sugar, and at a diminished cost, whilst selection of canes and the raising of seedlings—the result of comparatively recent botanical discovery—has led to the discovery that some varieties are richer in sugar than others, and less subject to disease. The whole appendix forms a valuable addition to the

the *Index Kewensis* under the original name, hispida. The general appearance of the plant is sufficiently indicated in Mr. W. G. SMITH's drawing (fig. 87) to preclude the necessity of description. We ought, however, to pass on the caution imparted to us, and repeat, "This plant stings." The flowers are of a pale yellow, of a singular form, evidently adapted to fertilisation by some insect, presumably one that knows how to avoid the barbed and venomous hairs on the foliage. These latter would keep off unauthorized intruders.

vision for heating, ventilation, and open tanks through which the pipes pass, so that an adequate supply of moisture is secured. The plants are suspended from the roof, and there are side borders at present utilised for *Dracenas* and decorative plants. No doubt this will form one of the most attractive, as it is certainly one of the most interesting additions to our noble gardens. The new house adjoins the stove-house in the T-range, and is entered from it at the angle formed by the stove and the Victoria-house.



FIG. 87.—*LOASA HISPIDA*: FLOWERS PALE YELLOW.

Some of the barbed hairs are shown magnified 50 diameters, and also one of the glandular hairs of much greater size.

literature of economic botany, and redounds to the credit of the reporter no less than to the establishment of which he is so distinguished an officer.

LOASA HISPIDA.—This is a beautiful annual, for the opportunity of figuring which we are indebted to the courtesy of Mr. LYNCH, of the Cambridge Botanic Gardens. It was originally introduced to the Chiswick Garden sixty or more years ago, and was figured by LINDLEY in the *Botanical Register* (1837), t. 1390, under the name of *ambrosiifolia*; but we must own that the reason there given for the abandonment of LINNÆUS' name do not seem very cogent. We are not surprised, therefore, to find the plant entered in

ROYAL HORTICULTURAL SOCIETY.—The dates fixed for next year's meetings are as follows:—1898: January 11; February 8; March 8, 22; April 12, 26; May 10; Temple Show, May 25, 26, 27; June 14, 28; July 12, 26; August 9, 23; September 6, 20; Fruit Show, Crystal Palace, September 29, 30, October 1; October 11, 25; November 8, 22; December 13. Any gentleman willing to deliver a lecture on any of these dates would greatly oblige by communicating at once with the Secretary, 117, Victoria Street, S.W.

NEPENTHES-HOUSE.—A new house for the cultivation of *Nepenthes* has just been completed at Kew. It is a light span-roofed structure, with ample pro-

NATIONAL CHRYSANTHEMUM SOCIETY.—It is the intention of this society to hold a special Apple competition—open to all, in commemoration of the sixtieth year of the reign of Her Majesty The QUEEN, on the occasion of the Chrysanthemum Exhibition at the Royal Aquarium, Westminster, on November 9 and two following days. There are to be shown twenty-four distinct dishes of Apples, five fruits of each; and nine varieties must be those which were in cultivation in this country in 1837, the remaining fifteen varieties consisting of such as have been introduced during the last thirty years. Mr. R. DEAN, Ranelagh Road, Ealing, will furnish intending exhibitors with full particulars of the competition on application.

THE POTAMOGETONS OF THE BRITISH ISLES.

—The object of this work is to supply a long needed set of good and reliable illustrations of British Potamogetons. Both descriptions (by Mr. ALFRED FRYER) and illustrations (by ROBERT MORGAN, F.L.S.) will include the varying forms and states as well as the generally recognised species. The synonymy, though not aiming at absolute completeness, will be ample for all working purposes. An attempt will be made towards a natural arrangement of the species founded on the changes of form in their progressive stages of growth, rather than on the comparatively limited distinctions afforded by the fruit, illustrations of which will form a special feature. Messrs. L. REEVE & Co., 6, Henrietta Street, Covent Garden, are the publishers.

HORTICULTURAL CLUB.—The first dinner and conversazione for the session 1897 to 1898 took place on Tuesday evening, October 12, and there was a good attendance of members. Mr. HARRY J. VEITCH occupied the chair, and there were present, Revs. W. Wilks, and H. Pemberton, Messrs. Williams, Cockett, L. Pearson, T. Francis Rivers, H. Turner, Gurney Randall, Asbee, Gordon, Geo. Monro, M. Garcia, and Herr Hugo Müller, President of the Pomological Society of Vienna, who was the guest of the Club for the evening; his health was proposed by the chairman. A paper was read by Mr. T. Francis Rivers on "Orchard-houses and Fruit;" an interesting discussion followed, and a cordial vote of thanks was awarded to Mr. Rivers for his excellent paper; this we hope to give in some future issue.

NEW CHRYSANTHEMUM.—At the meeting of the Floral Committee of the National Chrysanthemum Society on the 12th inst., a First-class Certificate was awarded to the variety, Viscomtesse Roger de Chezelles. This is a large sized Japanese bloom, very rich yellow in colour, with petals broad, slightly forked, flat, and incurving. Twelve blooms were shown finely by Mr. W. J. GODFREY, Exmouth.

SAD END OF A MEMBER OF THE KEW STAFF.—Some week or two ago, the pelican, which was a bird with a character, and popular with the visitors, escaped from the gardens. Nothing was heard of it till a few days since, when news reached the gardens that some wretched gamekeeper had shot the bird in Sussex. A later statement tells us that another pelican was shot on the Thames, near Hammersmith. This is more likely to have been the Kew bird than the one shot in Sussex. It seems to be impossible to prevent the indiscriminate slaughter of rare birds, revolting as the practice is to those interested in natural history.

SALIX GRACILISTYLIS, MIQUEL.—This handsome Japanese Willow has attracted much attention at Kew this season by reason of its bold, broadly lanceolate, thickly-nerved leaves, and crowded prominent buds. The catkins measure from 1½ to 3 inches in length, and are very striking. The tree was introduced by Messrs. BARBIER FRÈRES, of Orleans, and a full description of it is given by the late Professor MIQUEL, in the *Ann. Mus. Bot. Lugd. Bat.* (1867), vol. iii., p. 26. MIQUEL speaks of it as a *perdistincta* species. It occurs not only in Japan, but also in North China.

TECHNICAL INSTITUTE, DUNDEE.—Mr. D. T. FISH is to deliver a course of eight lectures on Fruit Culture under the auspices of the Dundee Horticultural Association. The cultivation of the Apple, Pear, Plum, Peach, Nectarine, Gooseberry, Currant, Raspberry, and Strawberry is to be discussed.

JOHN LAING & SONS, FOREST HILL, LONDON, S.E.—These well-known nurserymen desire us to inform our readers that the awards jury of the Victorian Era Exhibition at Earl's Court has just awarded them a Diploma and a Gold Medal in recognition of the meritorious manner in which they have planted the numerous beds in the gardens at that place of resort with flowering plants and shrubs.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The monthly meeting of this society was held at 25, Westgate

Road, Newcastle, on Tuesday, October 12. There was a good attendance of members, presided over by Mr. JOHN BULLOCK. Mr. M. LARKE, of North Dene, Gateshead, read an excellent paper on the tuberous-rooted Begonias, embracing their culture both for indoor decoration and for massing in beds. The paper was followed by an animated discussion in which many took part.

STAPELIA GIGANTEA is flowering in the stove at Kew. The species which was illustrated in our columns p. 693, vol. vii., 1877, has not only larger flowers than any of its congeners, but the flowers themselves differ in appearance from those of the ordinary type.

THE LATE MR. WILLIAM SCOTT.—In our last issue we announced the decease of Mr. WILLIAM SCOTT, the director of the Mauritius Botanic Garden, and now give some details as to his career, taken from an obituary notice in the *Stirling Observer*. Mr. SCOTT reached Stirling from the Mauritius about a month ago in excellent health and high spirits. About ten days ago he made the West Highland tour, but on ascending Ben Nevis unfortunately caught a cold, which complicated by an attack of fever and ague, rapidly developed into pneumonia. His parents were highly respected parishioners of Lomnay in Aberdeenshire, where Mr. SCOTT was born on September 21, 1859. On leaving school he entered the service as apprentice gardener of Colonel RUSSEL at Aden House. As journeyman he wrought at Forglen House, near Turrieff, and afterwards at Kippenross. After six months' residence at the Royal Gardens at Kew, he was selected in 1881 for the post of assistant to Mr. HORNE, who was then at the head of the Mauritius gardens and forests. Nine years after this Mr. HORNE retired through length of service, and Mr. SCOTT was immediately appointed his successor. Since then, till his death, he held the post of director of the Royal Botanical Gardens and Forests, many notices of his remarkable successes and accurate professional knowledge having in the meantime appeared in Government despatches, and in the local press. Mr. SCOTT had three gardens in his charge, the largest being Pamplemousses, containing 61 acres, at 228 feet above sea-level. These gardens suffered terribly in the hurricane of 1892, when every leaf was carried away, and, in Mr. SCOTT's opinion, many years will be required to secure for them their former appearance. The second garden is at Curepeep, 1800 feet above sea-level; and the third (which is not open to the public) is situated at Redway, the Governor's residence. In the Mauritius, Mr. SCOTT continued with great zeal the policy of his predecessor in planting forests of Grevilleas, blue Gums, and Casuarinas. The island is said to be comparatively bare of virgin forest, only about 2500 acres of that existing. Already Mr. SCOTT's labours are reaping their reward, for the planters are getting a much improved supply of firewood and of timber for building and fencing purposes. In the interest of the Sugar and Cacao industry Mr. SCOTT busied himself largely. On leaving Mauritius for home, Mr. SCOTT was presented with a sympathetic address from the officers and labourers of the Pamplemousses Gardens.

JUBILEE DRESS OF THE PRINCESS OF WALES.—From far-off Japan we receive the following account:—"The QUEEN'S dress has so often been described and so often pictured, that I will not speak of it; but the gown of the Princess of WALES was described to me by a lady who saw it at the dress-maker's. It was of mauve satin, the shade of a cattleyard Orchid." We spare the reader further details, as not suitable to our columns.

ROYAL TRADESMEN.—Messrs. DOBBIE & Co., of Rothesay Court, Seed Growers and Florists by Appointment, have been permitted to make the addition of the name of ANDREW MITCHELL to the title of the firm.

PRESENTATION AT EASTNOR CASTLE.—Mr. F. HARRIS, who is resigning the charge of Lady HENRY SOMERSET's garden at Eastnor Castle, was the subject of a presentation on the 10th inst., when the garden staff were entertained to supper under the old Vine in the gardens. A gold watch, bearing the

following inscription, was handed to Mr. HARRIS by her ladyship's agent, Mr. W. COLEMAN:—"Presented to FRANK HARRIS by those who have been connected with the Eastnor Castle Gardens during the nine years he has lived there, as a token of respect." Mr. COLEMAN paid a tribute to the abilities of Mr. HARRIS, and spoke to the success he had achieved as an exhibitor of fruit. In a few words of appreciation, Mr. HARRIS acknowledged the assistance he had been given by Mr. BARSON, the foreman, and the staff generally.

SHIRLEY GARDENERS' AND AMATEURS' IMPROVEMENT ASSOCIATION.—The monthly meeting was held at Southampton on Monday, the 18th inst. Mr. F. J. CROOK, Assistant Secretary to the Winchester Gardeners' Association, gave a paper on "Salads," and enumerated a startling variety of vegetables useful for the purpose, stating that gardeners gave insufficient consideration to the subject. The annual outing took place on the 2nd inst., when about thirty members visited the fruit show at the Crystal Palace.

NELSON AND TRAFALGAR.—On October 21, a double number of *Navy and Army Illustrated*, consisting of forty-eight pages, was published in connection with the celebration of Trafalgar Day. This number is a pictorial record of the great Admiral, his life, and achievements. It contains more than 100 illustrations, representing the principal episodes in the great hero's career, or portraits of his companions and contemporaries.

THE REQUIREMENTS OF PLANTS UNDER CULTIVATION.—A correspondent writes:—"Mr. ELWES, in recording the flowering of *Buphane disticha* or *toxicaria*, in his collection, after possessing it for twenty years or more, remarks (p. 270), 'Knowing that the plant was a native of the dry Kalahari desert of South Africa, where the rain is very scanty, the soil very sandy, and the climate excessively dry, I had roasted and starved the plant on a shelf in the greenhouse. When, however, my gardener began to treat it in exactly the same way as we treat *Nerines*, and gave it plenty of liquid-manure during its growing season, the bulb swelled up, became quite hard, and the leaves became much more luxuriant. This year it threw up a flower-spike at the beginning of September.' He then goes on to draw the inference that treating the plant according to natural conditions only resulted in failure, but the adoption of a totally different kind of treatment proved a success. If Mr. ELWES had referred to the *Flora Capensis* he would have seen that this plant grows in four different regions in South Africa—twelve different localities for it being mentioned—and that it also extends to Angola, and the mountains round Lake Nyassa and Tanganyika. Some, at least, of these localities have a very different climate from that described by Mr. ELWES, and it may safely be affirmed that the conditions under which the plant grows in a wild state approach much more nearly to the later treatment described than to the former, which was based upon a misapprehension of the facts. It is perfectly possible for a clever gardener to hit off as it were a successful method of treatment by what is often mis-called empirical means, as in the present instance, but a proper appreciation of the facts would have led to success long ago. There is nothing novel in adopting for this plant the treatment given to *Nerines*. Nature has adopted something pretty similar for ages, as may be seen by a comparison of the localities in which the respective plants grow." [*Buphane disticha*, the old *Hæmanthus toxicarius*, is described with its synonymy in the recently-issued volume of the *Flora Capensis*, by Mr. BAKER, who, as our correspondent rightly says, cites several widely separate and climatically different localities (see BAKER in *Flora Capensis*, ed., Dyer, vol. vi. (1896), p. 242). The first record of its flowering in this country is in *Botanical Magazine*, t. 1257, where it is stated to have flowered in 1809 in the garden of the Bishop of DURHAM, at Mongewell, in Oxfordshire, for the first time, though introduced by MASSON so far back as 1774. Ed.]

PUBLICATIONS RECEIVED.—*Indian Gardening*, a new weekly journal, devoted to gardening and agriculture, edited by H. ST. JOHN JACKSON, and published at Calcutta. We wish it every success, feeling sure that it will, as the promoters say, "fill a want." This first number is full of pro-

in Horticulture," L. H. BAILEY; "Green Fruit Worms," M. V. SLINGERLAND; "The Pistol-case Bearer," M. V. SLINGERLAND; "A Disease of Currant-Cane," E. J. DURAND; "Raspberry-Cane Maggot," M. V. SLINGERLAND; "Second Account of Sweet Peas," A. P. WYMAN and M. G. KAINS; "Talk about Dahlias,"

WILHELM MILLER; "Agricultural Extension Work, Sketch of its Origin and Progress,"—*The Botanical Gazette* (Chicago, Ill.), September.—*Small Holdings and Peasant Proprietors in Southern Germany*, by

C. TETLEY (London: EDWARD STANFORD, Charing Cross).—*European Mail* (Imperial Buildings, Ludgate Circus).—*Le Chrysanthème* (Lyon, 37, Rue Croiset), October 10.—*Le Moniteur d'Horticulture*, October 10.—*Bulletin de la Société Botanique de France*, Séance de Juin.—*Bulletin de la Société Royale de Botanique de Belgique*, Année 1897.—*Illustrierte Flora* (Wien), October 1.—*Botanisches Centralblatt*, Nr. 41.—*Die Gartenwelt*, October 10.—*Nuovo Giornale Botanico Italiana*, October.—*Tijdschrift voor Tuinbouw*, Nos. 4 and 5.—*Commercial Uses of Coal Gas*, by THOS. FLETCHER (FLETCHER, RUSSELL & Co., Warrington, Manchester, and London).—*Mittheilungen der Gartenbau-Gesellschaft*, October 1.—*The Orchid Review*, October.

CALATHEA SPECIES (MARANTA PICTA, Hort. Bull.)

THIS very beautiful stove foliage plant was shown under the name of *Maranta picta*, at the last meeting of the Royal Horticultural Society by Mr. William Bull. It is a tufted plant, with erect, conduplicate leaf-sheaths, 4 to 5 inches long, each ending in a short cylindrical petiole 1 to 3 inches in length. The blade of the leaf is 9 to 12 inches long, 3 to 4 inches broad, velvety on both surfaces, broadly lanceolate, acuminate, deep green above, with a broad, central, greenish-yellow band running through the centre of the leaf, and branching on each side into alternate, curved, lanceolate lobes cut at the further margin into sharp lobules, like the pinnule of a Caryota, or like the tail of some fishes. The under side is of a rich claret colour.

In Regel's *Gartenflora* (1879), p. 293, is an enumeration of the species, which are arranged in eighteen sub-divisions, according to the nature and form of their variegation. Thus in some the stripes or markings are parallel with the margins and midrib of the leaves. In other cases the markings are transverse, sometimes linear, at other times oval; in fact, showing great variation. The plant before us (fig. 88) does not correspond with any that we find described or figured, but it would be rash to assume it to be new, as the dried specimens in herbaria lose their characteristic markings, and hence it is not easy to refer the cultivated forms to their original types.

HOME CORRESPONDENCE.

ANTHRACITE COAL—Many times you have written recommending the employment of anthracite coal by gardeners in the furnaces. Having moved to the Manor House, Wallington, the landlord allowed me to select certain fireplaces and grates, and quite by accident I selected the slow combustion pattern, that is say, the grate with upright bars and a pull-out frame at the bottom, which is used when an extra draught is required. I found that these grates, which have stone backs, drew with such force that, although the damper at the bottom was in quite firmly, excluding all possibility of air passing, still there was a strong fire. I thought I would like to turn this to account, and I sent into the yard and obtained several scuttles of anthracite coal; this I placed on the fires, and I am very glad to be able to say that it burnt perfectly. Now it is known to all consumers of coal that anthracite is very cheap, not only in its first cost, but also on account of its lasting so very much longer on the fire, and still having a bright glow. I obtained my anthracite coal through Forester of Swansea, but I am not aware that it is of any peculiar nature, neither do I know the name of the pit that it comes from. I wrote to Mr. Forester to tell him of my success in burning the anthracite coal in these grates, and he said it was quite new to him, and he begged me to send him drawings of the grates, which I did. When the fire had exhausted itself in these grates there was hardly any ash left. If you think it of sufficient interest to publish a drawing of these stoves and grates, I shall be very glad to obtain drawings for you, as I consider it rather an important discovery. *Thos. Christy*. [Please do so. Ed.]



FIG. 88.—LEAF OF CALATHEA SPECIES (MARANTA PICTA, Hort. Bull.).

mise, and shows it to be intended as a high-class journal. It contains articles on Horticulture in the Shan States, Horticulture in Mysore, *Cyperus bulbosus* or *seculentus*, *Adiantum Farleyense*, Sabai-grass, &c. —From the Cornell University Agricultural Experiment Station, Ithaca, New York, come the following *Bulletins*:—"Second Report upon Extension Work

WILHELM MILLER; "Notes upon Plums," S. D. WILLARD and L. H. BAILEY; "Notes upon Celery," B. M. DUGGAR and L. H. BAILEY; "Army-Worm in New York," M. V. SLINGERLAND; "Strawberries under Glass," C. E. HUNN and L. H. BAILEY; "Forage Crops," J. P. ROBERTS and L. A. CLINTON; "Chrysanthemums of 1896," L. H. BAILEY and

THE FIRM OF J. R. PEARSON & SONS.—In the review of the horticultural trade for the past sixty years in the issue for October 2, p. 225, Mr. Dean appears to mention our firm as coming into existence in the earlier part of Her Majesty's reign. This is scarcely correct, as our great-grandfather was established here in the nursery business 130 years ago. We believe that there are only three other cases in the trade where a family has carried on business for the same length of time in one spot, viz., Backhouse (York), Dicksons (Chester), and Warner (Leicester). *J. R. Pearson & Sons, Chilwell Nurseries, Notts.*

ABERIA CAFFRA, ETC.—I should like to put it on record in the *Gardeners' Chronicle* that Mr. Thomas Hanbury frequently sends over to this country the fruit of *Aberia caffra*, which he has grown at La Mortola. (See *Gardeners' Chronicle*, Dec. 21, 1895, p. 737, fig. 123). I have now large plants from seed obtained from this fruit. I have also had the fruit in a very fresh state from the Cape. I look upon your No. 564 of October 16 as a most valuable paper. The particulars respecting the planting of fruit-trees will be most welcome to many of your readers. *T. Christy.*

THE KENT MANURE-TRIALS.—Whilst the reports of the manure-trials conducted in Kent by Dr. Dyer are interesting reading, they furnish no indication as to the actual condition of the animal-manure employed in the trials, a matter of some importance, because it is subject to wide variation. The food-strength—or, shall we say, fertilising-strength—of artificial-manure may always be tested by analysis, and the strength or weakness of the sample is as a rule the strength or weakness of the bulk. In the case of animal-manures, any analysis to be exact must be of considerable bulk, and the proportion of plant-food is not easy to determine. If applied to the soil last spring (the soil and season being very dry relatively) in a wet state, or in the condition that is commonly termed fat farmyard-manure, not only would the excess probably of 70 per cent. of water found in it prove of exceeding value in moistening the dry soil, but being in an advanced stage of decomposition, not only would such mineral elements as it might possess be at once available for plant-food, but the fibre found in it would also very quickly become converted into plant-food. All the same, it is well known that such decomposed, moist manures are very deficient in plant-food, and where employed in comparison with good artificials, come out of the test in respect of actual fertility, badly. The moisture in the manure in a dry season has done more good in promoting growth than has the small proportion of mineral food found in it. But if the animal manure is of a fresh description, and applied at once to the soil in its raw state,* whilst the soil thus secures possession of all its plant-feeding properties, yet plants have longer to wait ere these elements can be utilised, both because the manure is much drier, adding little or perhaps nothing to the soil moisture. The dryness of the soil checks decomposition, and thus the whole of a dry season might elapse ere the animal-manure dressing was utilised. That it will be capable of utilisation for a succeeding crop after abundant rains have fallen there can be no doubt; indeed, every one knows that such is the case—artificial manures are readily soluble. Soil must be very dry indeed if the mineral salts found in them do not attract from the soil and the atmosphere enough of moisture to produce fairly quick solution. Thus in dry seasons, whilst excellent yet dry animal-manure containing much fibre, which is latent plant-food, may be in the soil unused by crops, because insoluble for lack of moisture, mineral-salts quickly dissolve, and are thus steadily utilised when wet weather prevails. Minerals, on the other hand, are rapidly washed out of the soil, whilst animal or fibre-manures are fully dissolved and utilised, and are then of greater value than are artificials. The putting into dry soils of so heavy a dressing as fifty loads of animal-manure would, if dry and fibrous, only serve to render the dryness the greater, because exposing the soil so thoroughly to atmospheric influences. If one half, that is the excrementitious portion, were buried, and the long half utilised as mulch, the effect on the crops would be greatly marked. One very grave defect in land-culture, both in market and farm-field culture, but especially so in the former case, is the crowding of an excess of fibre-manure into soil that is very shallow-cultivated. Were the subsoil broken up, and one-half the manure-dressing buried, the average crop-production would be immediately and for a long time doubled. Manure-merchants are thinking only of disposing of their wares, and cultivation is to them of trifling moment. Practically, the cultivator who deepens the root-area of his ground

by trenching or subsoiling, at once doubles the crop-area of his land, without adding to it one single shilling for rent or for manures. I have a lively recollection of the manure-trials conducted during a dry season at Reading a year or two since, and the singularly inconsequential results that followed. The first thing to do in employing manures, artificial or otherwise, is to ascertain by analysis their fertilising strength. Then it is important to know something of the actual condition of the ground. At Reading, for instance, we saw soil unmanured for two years giving as good results as came from plots manured for two years. No wonder if all who came to learn went home as wise as they were when they set out. *A. D.*

THE SHADING, VENTILATING, WARMING, AND LIGHTING OF VINERIES CONTAINING MUSCAT VINES.

—Mr. Smith, gardener at Harewood House, Colin Deep Lane, Hendon, has some sensible, if somewhat startling, remarks on this important subject in the *Gardeners' Chronicle* for September 25, p. 219. The most sensible part of his note is his assurance that it is essential to good flavour that the vinery should be carefully ventilated at this season; for the Grapes should be ripe at the end of the month unless wanted for table at a very late date. This is always admitted. The vinery should have air admitted when its temperature rises to 70°, as a degree higher than that might cause scorching of the foliage. If this errs at all, it is on the side being too cool, a safer thing than the excessively high degree of warmth afforded Muscats by some gardeners. But the shading with a double fish-net over the glass is the most startling receipt for the making of perfect Muscat Grapes that I have come across. It may indeed at times prevent scorching of the foliage; although, due care exercised in ventilating would remove all danger from this source, and it is the only thing necessary under our rather watery sunshine. The removing of the fruiting laterals of Grapes 4 or 6 inches from the glass is also a much safer caution to take care against the scorching of the leaves or the fruit than the use of shading material. The fullest exposure of the Vines to sunlight is another antidote to the scorching of Muscats and other Vines; plenty of light and air combined rendering a Vine less liable to scorching of the leaves than a moist, close method of culture. I entirely agree with Mr. Smith as to the need of early maturity for the production of high quality and sound and long keeping. Other conditions being favourable, a rise of 5° or more to hasten maturity need not injure the fruit when it is approaching perfect ripeness; and with greater warmth in a vinery in moderation, the more aerial movement is caused, and that, too, without, draught. *D. T. F.*

BOILING PEAS (BLUE BOILERS).—Few perhaps are aware that Peas for boiling in a dry state are grown most extensively. Thousands of quarters are harvested and sent to the manufacturing districts—to Lancashire and Yorkshire especially, for boiling. Throughout Lincolnshire especially, on the soils suitable for the production of Peas, very large breadths of certain blue varieties are sown for this purpose; indeed, it is an important and remunerative crop for the farmer to cultivate. The leading varieties grown for this purpose are Harrison's Glory and Bedman's Imperial, the latter an old variety which has been in cultivation for nearly or quite sixty years. These varieties are harvested when ripe in the usual way, thrashed out, and sold to the merchants, who have them handpicked, and then they are marketed, finding a ready sale in the midlands and northern counties, and they may be regarded as a staple article of food in the manufacturing districts. Those who retail these Peas boil them, and then take their position in the market, or some open place about 8 o'clock in the evening, a bell is rung, the women crowd round with basins purchasing them while hot for the family supper. Probably there are many persons with scanty means who are unaware what a valuable and satisfying, as well as nourishing article of food boiled Peas are. They are best soaked for twenty-four hours in water, and then they boil perfectly, and come to the table soft and edible, finely flavoured, and by many as well esteemed as fresh-gathered Peas. It is doubtful if the vegetarian restaurants supply Peas in this way; in our ordinary eating-houses and restaurants they appear to be unknown. Good samples of boiling Peas will sell at from 60s. to 80s. per quarter; the price depends upon the quality. It may be added, in reference to soaking the Peas in water before boiling, that the water should be cold, and sometimes so much of the water do the Peas absorb, that it is necessary to supply more. It is usual to boil in

the second water when this is the case; also to allow the Peas to gently simmer for two-and-a-half hours, and not boil too rapidly. All dry Peas will not boil well, but remain hard. This is the reason that the two varieties named above are so popular for the purpose. Those which boil well of the old stocks left on hand are available for split Peas; those which resist the efforts of the cook to render soft and palatable, are useful for cattle-food. *R. D.*

CHRYSANTHEMUM - FUNGUS.—I enclose some *Chrysanthemum* leaves infested with the fungus your correspondent "M. C. C." so accurately described on p. 256. I first noticed the disease early this year on some young plants of an American variety received from a *Chrysanthemum* specialist; and being suspicious it might develop seriously, I had all leaves carefully removed that were affected. It continued to show itself throughout the season, but there was no serious spread until the months of August and September, when it appeared on almost every plant in a collection of some 400, within a week of showing active signs of spreading. Every means were taken to combat it by spraying and syringing with fungicide, including Paris Green and other copper solutions, but with little or no effect, and so far I have been unable to arrest its progress. Some varieties suffer much more severely than others, notably Modesta, New York, Pride of Exmouth, and others of soft growth. Whether this fungus has been imported with American varieties or not it would be interesting to learn, as it seems singular there should be this sudden outbreak in so many different parts of the country in one season. Perhaps some of our *Chrysanthemum* nurserymen could enlighten us. *F. H.*

BORDEAUX MIXTURE AND THE POTATO DISEASE.—Of the English or Scotch peasants, and even myriads of gardeners and farmers how few have employed the copper mixture as a factor in Potato culture, how few indeed believe in it! But in all localities where the Potato disease largely prevails, and of course specially so in a humid country like Ireland, if any efforts are to be made in the use of the Bordeaux Mixture, the operating force must be the local authority. I startled some Gloucestershire farmers some time since by suggesting that to properly grapple with the Winter moth pest, local authorities should not only have power to enforce the use of proper remedies, but should possess for local use and hire all the needful appliances. It would be only in that way that any great outbreak of the moth-pest amongst the fruit orchards could be stayed and overcome. We want exactly the same sort of thing in relation to the Potato disease. How few can purchase the needful tubs, ingredients, or sprayers. It is all very well to rail at the idleness of the peasant, but let the railers put themselves in his place. Now, were the needful requirements locally furnished, and powers to enforce their use in each authorities' district given, how much might be accomplished all the country over in arresting the spread of the fungus. The small breadths in gardens and allotments could be done by an expert rapidly; and in Ireland especially, the cost, necessarily a trifling one to the peasant, might be repaid several times over in the saving of the tuber crop. In matters of example, local authorities are the most suited to lead the way. *A. D.* [The Jensen system of high moulding is better for the labourer than the copper treatment.—*Ed.*]

SHRIVELLING OF VENN'S BLACK MUSCAT GRAPES.—In this interesting case, referred to in last week's *Gardeners' Chronicle*, p. 274, no certain cause of shrivelling is indicated. "Vine" is, however, probably on the right tack when looking for it in the dryness at the roots, either early in the season (March, as he indicates), or during the summer, or towards the autumn or finishing of the Grapes. Probably very few Vine-growers would approve of watering the borders at intervals of three weeks; and the editorial suspicion that these might have been chiefly or wholly absorbed by the surface-soil, without reaching the main roots, is possibly correct, and may have been contributory to the shrivelling. But as you truly add, more facts are needed as to the character and depth of soil, drainage, fall, width, age of borders, whether outside or in, or both, as is more frequently the case before the causes of the conversion of the Grapes into raisins, during their finishing stages, are likely to be unravelled. While waiting for such particulars, growers could hardly be more profitably employed than in pondering the first portion of the editorial sentence on this interesting case, which seems as follows:—"Unless the border was thoroughly saturated, which could only be ascertained by excavating a small hole here and

there down to the drainage," &c. Now, until quite recently, this was the only means open to fruit-growers for testing the growing needs and physical conditions of their Vine or other fruit borders. It was so slow, cumbersome, risky, as to be far oftener honoured in the breach than the observance. Hence the second and other remedies suggested of uncovering the outlets in the drains themselves, &c. But now the mellow experience of a famous Grape-grower has invented a simple instrument, which I have lately seen at work on some of our best Vine-borders, which reduces their testing and trying to something like the simplicity and despatch of the tasting of cheese. In fact it is founded on similar principles. A half circular tube of steel is thrust into the cheese or border to any desired depth, and turned round and withdrawn with a section of the contents fully exposed for tasting, testing, and thorough complete examination. The soil may then be returned to the spot whence it was withdrawn, with the utmost despatch, and a minimum of disturbance to roots or border. As the result of such examination I found a heavy crop of late Grapes being slowly flooded with running water in October. Also that few of our first-class Grape-growers seem to believe in dryness at the roots at the finish as a factor in the development of the highest flavour, or the laying on of the densest bloom. The inventor of this new test for Vines or other fruit-tree borders, or other soils, is the well-known Scottish Grape-grower, Mr. Alexander Kirk, Norwood, Alloa, where I had the pleasure of making its acquaintance. Mr. Kirk has provisionally patented it, as it is sure to have a great future in horticulture. It is simple and strong, made of steel, has a strong cross-bar as a handle, weighs about 12 lb., and is 4 feet in length. In porous borders it can be pushed in by the force of both hands; in stiffer soils, a wooden mallet sends it down to the bottom of the border with a few blows. A sharp wrench or turn of the cross-bar in an upward direction, and the instrument, with its unbroken segment of soil, is under inspection. The inventor adds: the temperature of the border can also be ascertained by placing a ground thermometer in the sheath of the instrument. This is especially important in early forcing. In the circular which I enclose, by which you will see that this instrument is only a guinea complete, the inventor, who writes with special authority on such subjects, truly says, "That one of the grand secrets in plant and Grape-growing is to know when to give water, and when to withhold it. As a rule Vine and Peach-borders are too often dry at the bottom when least expected; this will cause Grape-shanking and Peach-dropping." Never give a Vine-border a heavy drenching of water until you have tested the soil with this instrument. Over-watering or under-watering will lead to bad results. The system of watering Vine-borders every ten or twelve days is groping in the dark, and cannot be too strongly condemned. I may add, that other famous Grape-growers, whom I have recently seen at home, highly approve of this handy and efficient border-tester. D. T. Fish, 12, Pettes Row, Edinburgh.

SOME NEW FUCHSIAS.—That veteran Fuchsia grower and raiser, Mr. James Lye, of Market Lavingson, Wilt, although he has left his half-century home at Clyffe Hall, and has taken up his residence at Easterton, near the same town, is still on the war-path in his old operations. He exhibited splendid plants at Bath recently, and has just sent me, to show that he is still raising new ones, bunches of half-a-dozen that exhibit very superior form, and must be exceedingly floriferous. Mr. Lye has never worked to obtain the huge flowers continental growers have sent us—varieties that would be useless for exhibition or travelling. He has aimed to secure stout sturdy growth, short jointed, and carrying in profusion bloom that is very massive, and hangs well. Capability for good travelling is a special feature of Mr. Lye's seedlings, and it is indeed a matter of no small importance when plants have to be carried by road or rail some 20 or 50 miles. For all ordinary bedding purposes, these sturdy varieties are the very best also. Clipper is a rich red, sepals well reflexed, corolla deep claret-red. Snowdrop has large globular buds that open fully, and expose a long petticoat of white petals, barrel-shaped, and slightly streaked red; Mrs. Hobhouse is a handsome white, having a long tube and broad sepals, with rosy-red corolla; W. H. Mould, white tube and sepals, which are long and well reflexed, corolla cerise-red; Eclipse, also white, but more massive, with rosy-carmine corolla; and, finest of all perhaps, Jubilee, with massive tube and wax-white sepals, with broad, rosy-red corolla. A. D.

YEW.—I have been much interested in the leading article on Yews which appeared in a recent issue of the *Gardeners' Chronicle*. I have here forty different sorts planted side by side. Among them are several seedlings, both green and variegated, between the common and Irish Yew. One variegated variety is more vigorous than the common Yew, and it will make a very large tree. Another variety is a great improvement on the present variegated Irish, growing broader and of beautiful form. William Paul, Waltham Cross.

NEW INVENTION.

A CONTRIVANCE FOR ELEVATING ORCHID-POTS.

AN exceedingly simple stand is sent us by Mr. Wm. Murray, the skilful Orchid-grower to Norman Cookson, Esq., Oakwood, Wylam-on-Tyne. It consists of two metal rings of different sizes, and united by three thin rods or pillars placed triangularly. The smaller ring, of course, is placed at the top, and the stand has therefore much the same shape as an inverted pot, the base being largest. It differs, however, very widely from the pot, for it affords no check to the circulation of air among and under the plants. In a pot the air there accumulated must become impure from comparative stagnation, and the present stand is recommended as preventing this. A plant upon such a stand would be practically suspended. Moreover, these stands are likely to remain clean a long time, and they will not break. Of course, they can be had in any size or height. As a plant-elevator, we consider it a capital one, and theoretically it should possess decided advantages over pots, although the latter have been used so long, and given such comparative satisfaction.

Obituary.

E. J. BAILLIE.—It is with great regret that we have to announce the death of Mr. E. J. Baillie, so long connected with the firm of Dicksons, of Chester. Mr. Baillie died on Monday last. In our next issue we hope to publish an account of his career, which was one not of limited, but also of general usefulness.

MR. ISAAC DAVIES.—The death of Mr. Isaac Davies, senior partner in the firm of Davies & Son, nurserymen, Brook Lane, Ormskirk, took place on Sunday, the 10th inst., at the ripe age of eighty-five years. The deceased belonged to the old school of nurserymen, and carried on a very lucrative business for many years at the above place. He was the raiser of many good Azaleas and Rhododendrons, Pelargoniums, Calceolarias, &c. Azaleas Daviei and A. Avalanche were of his production, as were Rhododendrons precox, multiflorum, elegantissimum, and the beautiful and fragrant Countess of Derby, Countess of Sefton, Lady Skelmersdale, Duchess of Sutherland, Miss Davies, Mrs. James Shawe, and many hardy varieties, such as R. Lothair, Monarch, Resplendent, and La Brillante. He thoroughly believed in doing things well, and was a good all-round plantsman. A. O.

REV. C. S. P. PARISH.—The death occurred on Monday of the Rev. Charles Samuel Pollock Parish, who passed away in his sleep at his residence, Roughmoor, Somerset, at the age of seventy-five years. Deceased, who was a fine scholar, and was very much interested in botany and the doings of the Somerset Archaeological Society, took his degree of B.A., at St. Edmund's Hall, Oxford, in 1841. In 1852 he became Indian chaplain at Moulmein, Burmah, and held that position until 1876. Two years later he retired, and held no further permanent duty. Mr. Parish was an ardent Orchidist, making large collections in Burmah, and was the discoverer of many new species, most of which were described in these columns by the late Professor Reichenbach. A Vanda, a Cyrtopodium, and numerous other Orchids bear his name.

MRS. THISELTON-DYER.—On the 13th inst., at 118, King Henry's Road, N.W., after a long illness, Catherine Jane Thiselton-Dyer, widow of William George Thiselton-Dyer, M.D., of 7, Berkeley St., W.

SOCIETIES.

ROYAL HORTICULTURAL. SECOND DAY'S CONFERENCE.

PROGRESS IN VEGETABLE CULTIVATION DURING QUEEN VICTORIA'S REIGN.

(Continued from p. 277.)

OCTOBER 8.—

ASPARAGUS.

Until quite recently, English gardeners and their employers appeared to be quite satisfied with the kinds grown when the Queen came to the throne, such as Giant and Battersea; but the greater facilities for reaching the Continent have resulted in the desire to cultivate the sorts which produce the massive sticks so well grown in France. The most popular strain of the latter is the best selection of Argenteuil; and when the English cook has learned to imitate more closely the methods of the French chef, we shall doubtless find as delicate and delicious Asparagus in London restaurants as in those of Paris.

In like manner has the increased taste for Globe Artichokes been formed, a delicacy which was seldom grown fifty to sixty years ago.

The increased use also of Sugar Peas, Waxpod or Butter Beans, Celeriac, Chloory, Endive, Cardoons, Egg-plants, Silver or Seakale Beet, and other kindred subjects, may be traced to the same cause.

We do not appreciate all the ways of railway companies, but they have undoubtedly been the means of introducing us to some of the more delicate and delicious vegetables of the Continent.

BEET.

Salads are much more popular now than sixty years ago, and as Beet perhaps comes next in importance to the Cucumber and Lettuce, the natural result has been a marked improvement in the varieties grown. In the early days of the Queen's reign, "Dwarf Red," "Large Red," and "Turnip-rooted," were the sorts in use. Seeing how difficult it is to obtain seed which will produce absolutely uniform results in colour of leaf, &c., it was a happy idea on the part of the seed-seller of those days to protect himself by labelling the packets with such comprehensive names as "Large Red," "Dwarf Red," and "Turnip-rooted." It is quite certain that even now the former description would be very applicable to strains frequently seen growing. In 1841, "Whyte's Black" was introduced, a variety almost black in the flesh, but inclined to be coarse in texture, as well as strong in growth, and with considerable variation in the colour of leaf. Notwithstanding these faults, it is still to be found in nearly all seed-lists, and presumably, therefore, has its admirers. Of late years a large number of improved types of this class have been seen, and those who fancy Beets with flesh almost black have no lack of choice.

Later introductions which remain popular were "Nutting's Dwarf," "Pine-Apple," and "Dell's Black-leaved." Of the first and last various selections have been made, resulting in uniform and excellent types.

Within recent years "Cheltenham Green-top" has also come to the front, although I understand it has long been grown in the neighbourhood from which it takes its name. It is an excellent Beet, although disliked by some on account of the colour of the leaves. The "Turnip-rooted," so useful for shallow soils, has undergone great improvement, the flat type, called Egyptian, being almost superseded in English gardens by the introduction in 1891 of our Globe, which is as perfect in form and clean in growth as a Snowball Turnip. Many types of Globe Beet have also been introduced from America, but generally speaking, the colour of the flesh is not up to the English standard.

A strange development in the leaves of the Beet has lately been observed, and we may soon see in our flower gardens a variety which produces a beautifully variegated foliage in addition to a very fine well-flavoured root. A white Beet called Bassano was also grown in the thirties, but it never became very popular. In recent years efforts have been made to popularise a yellow-fleshed kind, but although I can vouch for the excellent flavour of this Beet, the general public do not appreciate it.

THE BRASSICAS.—CABBAGE.

First and foremost in point of general utility comes the Cabbage. Although our forefathers had not so long a list of names to select from as gardeners now have, there were several good Cabbages in 1837. Chief among these were Early Battersea, Early York, Large York, Emperor, Sugar-loaf, &c., names which still retain a place in all seed lists, and are certainly valuable for spring sowing. It is reasonable to suppose that the crops of those days suffered from "bolters," and with none but these and similar sorts to grow the probability is that an even bed of Spring Cabbage would be the exception, as these sorts are peculiarly liable to bolt. Of late years much has been done to avoid this tendency, and we now have such Cabbages as Ellam's Early, Early Offenham, Imperial, and our own Flower of Spring and Early April, which when obtained true to name may be relied upon in any season to form solid hearts without bolting.

The improvement in the Cabbage has been entirely due to selection. The advent of the Nonpareil was a distinct gain to horticulture. Amongst others Shaw of Newbury, did much to make this Cabbage popular, and as it is one of the best for spring sowing, it will be long before it ceases to be grown. Enfield Market is popular where a large growing

kind is required. Almost every market-gardening district has its own particular selection, as seen in The Raleigh, Higham, Evesham, East Ham, and Fulham varieties.

Rapid strides have been made in the improvement of early Cabbages for summer use, and although many of the earliest are of Continental origin, we on this side can claim no inconsiderable amount of credit on account of the careful selection given to them. Earliest of All, Express, and their kindred types of Cabbages which we could not now well do without, but on account of their tendency to bolt they must give place for August sowing to the sorts previously named.

The Hardy Green Colewort was introduced in 1852, and a selection from it, Rosette Colewort, appeared a few years later. These are very important crops for consumption towards the end of the year, and are delicious in flavour.

Red Cabbages have been so far improved that instead of relying on an August sowing for heads to use the following summer and autumn they can now be obtained in the same year by sowing in spring.

Savoy Cabbages, on account of the limited period in which they are required for use, have not had so much attention devoted to them, although it is now possible by the use of recently introduced early and later kinds to extend the supply from August to April if required.

BRUSSELS SPROUTS

amongst Brassicas stand second only to the Cabbage, Broccoli and Cauliflower in importance. This plant was well known in 1837, but since that time wonders have been accomplished in its improvement by means of selection, and we now have dwarf, medium, and tall varieties of great excellence. Strymger's Giant, Dalkoth, and Reading Exhibition were among the earlier improvements, while the Dalmeny and Albert Sprouts first offered about 1858-9, had but a short-lived reputation.

A dwarf type originating on the Continent, and covered with close firm buttons, has of late years given grand results, the best known strain being the Dwarf Gem. As is well known the sporting tendency of the Brassicas is responsible for some very peculiar forms, and it is I think, not at all unlikely that a Brussels Sprout with red buttons may eventually have a place amongst our favourite vegetables.

BROCCOLI

were represented in the earlier days by the Cape, Grange's Autumn, Portsmouth, Sulphur, Dwarf Russian, Purple Sprouting, and Knight's Protecting. In 1843, that popular sort, Snow's Winter White, was first offered, and although various and inferior strains have been offered under this name, it is safe to say that in many cases the seed now sold is altogether superior to the original type. The following year Walcheren, which perhaps should be classed amongst the Cauliflowers, was brought to notice, and has done good service. After this came Adams' Early, Wilcox's Late White, Dilcock's Bride, and White Sprouting. In later years, Broccoli with heads of closer and whiter texture have appeared, including Leamington (still one of the best), Perfection, and Late Queen. Great improvements have been made in Purple Sprouting Broccoli by selection, and it is now possible to grow three distinct types, the earliest of which is available for use at Christmas, the ordinary type following, and lastly a late selection of more compact growth and better coloured sprouts. The hardness of these strains is an important feature, and their popularity must continue.

In the late Broccoli it has been difficult to retain lateness without in some degree sacrificing colour and quality, but I am pleased to note that a late Broccoli, which continues good in quality longer than any variety with which I am acquainted, and with heads which are in every way equal to an autumn Cauliflower, is already in existence, and will certainly become deservedly popular. By these late, as well as the extra early selections, there is now no difficulty in having a succession of good Broccoli and Cauliflower throughout the year.

CAULIFLOWERS

are scarcely to be surpassed for delicacy of flavour when properly cooked. Three types were grown in 1837, the Early, Late, and Asiatic. These were followed by the Stadtholder and Walcheren, Snowball, Erfurt, and Autumn Giant. As Cauliflower seed can seldom be successfully grown in England, we are, of course, indebted chiefly to our Dutch, German, and Italian specialists for most of the improvements made; and with the finest types of the Dwarf Erfurt section, such as Snowball and First Crop at one end, and the early and late selections of the Italian Giant varieties at the other, we can extend the supply over a very much longer period than was possible sixty years ago. A head of Cauliflower 36 to 38 inches in circumference of perfect quality was a thing unheard of in 1837, but it is by no means uncommon to-day.

KALES

The great diversity in colour and form of this section of the Brassicas at the present day would surprise any gardener who knew only the few sorts existing at the commencement of the Victorian era. The hardness of this useful vegetable has always been its most important feature, and it is to be hoped that the newer selections will retain this essential characteristic.

During the fifties Mr. Turner introduced the hardy and most useful Cottager's Kale, and it appears to increase in favour. Mention must also be made of the Variegated Kale, a highly ornamental plant, as well as useful for cooking purposes. In mid-winter the charming colours of the leaves render them invaluable for decorative purposes.

THE CELERIES OF 1837

were the Italian, Red and White Solid, and Turnip-rooted, and although at this date there are many superior sorts, Celeries vary so little in character that there is less scope for great improvement than in many other garden vegetables. Much, however, has been done in improving the solidity and flavour, and amongst the Reds may be noted Clayworth Prize, A1, Standard Bearer, Sulham Prize, and Leicester Red, with Solid White and Wright's Grove White as the best of the white section. Probably the most distinct variety of English origin is White Gem, a small early sort of great value.

Attempts have been made to popularise the continental self-blanching sorts, but although they may be useful for soups, they are practically of no value where tender fine-flavoured Celery is prized, for except in appearance they differ but little from unblanched English Celeries.

CARROT

In Carrots the progress made has been as great as in other vegetables during the period under review. Although there were several varieties grown in the early years of the Queen's reign, they were either very long, such as Altrincham and Surrey, or of the horn section. Improvements on some of these quickly appeared, James' Scarlet Intermediate at once meeting with approval, and for market purposes this will doubtless long continue to be grown. Our French neighbours are adepts at the improvement of the Carrot, and the English trade is indebted to them in this respect to a larger extent perhaps than for any other vegetable. The French Forcing Horn and Nantes have met with warm approval, the finest types of the latter being particularly free from the objectionable yellow core existing in most sorts. It is only necessary to refer to the magnificent specimens of New Intermediate and Early Gem, and similar varieties which are so frequently seen on the exhibition table for evidence of the great improvement which has been made in this popular vegetable.

THE CUCUMBER

was represented by numerous sorts at the time of the accession of the Queen. Chief among them being Early Frame and White and Black Spine, besides the so-called Long Prickly and Short Prickly Ridge Cucumbers. Snow, Cuthill, Mills, and Constantine were among the earliest improvers of this popular esculent, and by 1842 many varieties were available.

Kelway's Victory and Phenomenon, Sion House, and Victory of Bath appeared during the fifties, and a few years later Berkshire Champion and Manchester Prize. It was then that Thomas Lockie took the Cucumber in hand, and Blue Gown (and its sport Tender-and-True), Royal Windsor, and the deservedly popular Lockie's Perfection were the leading varieties raised by him. Meanwhile other sorts, including Telegraph and Cardiff Castle, obtained a leading place, and it will be a long time before Telegraph is superseded for general cultivation.

I have not enquired from the Messrs. Rochford how many years the Rochford Cucumber has been in their family, but it is probably more sought after by growers for market than any other variety. In recent years the palm for raising improved varieties must certainly be given to Mr. Mortimer, whose wonderful exhibits at the Drill Hall and elsewhere have been greatly admired. Sutton's A1, Peerless, Progress, and Matchless are results of his painstaking work.

Notwithstanding the almost endless varieties now procurable, it is generally admitted that none of them supply the ideal type required for cultivation on a large scale. For productiveness no sort equals the best strain of Telegraph, but the somewhat pale colour, especially when the plants are bearing a heavy crop, lessens its value for market purposes; and if the council of the Royal Horticultural Society should see their way to undertake a series of trials at Chiswick, I would gladly offer a prize of £5 5s. for the seedling Cucumber, raised since 1896, which shall combine the productiveness and excellent form of Telegraph, with the dark colour of Rochford's Cucumber.

THE LEEK

In 1837 was represented in this country by the common and Flag types, although it is on record that in the previous year four Scotch Leeks were produced in Edinburgh with a circumference of 9 inches or more. A Scotch gardener now living informs me that although he came to England in 1854, it was several years before he saw Leeks grown here. The Musselburgh was one of the first improved forms, followed by Aytton Castle and Henry's Prize. The greatest triumph, however, is found in the Lyon, and the better selections of this good variety, such as Prizetaker, appear to present as perfect a form of Leek as it is possible to obtain or desire.

In this connection may be mentioned the excellent work done by the Messrs. Dobbie, who have introduced one or two very fine selections of Leek as well as of several other vegetables.

LETTUCE

The number of varieties, both Cos and Cabbage, has wonderfully increased during the past twenty years, and they embrace many types and shades of colour.

In 1837 several of the leading varieties of the present day were in use, including, amongst the Cabbage varieties, Brown Dutch, Brown and White Silesian, Drumhead, Grand Admiral, Hummersmith, and one or two others; and in the Cos, White-seeded and Black-seeded Bath, Florence, Green, White, and Spotted.

By 1842 Paris White and Green were announced, and the various selections of this type are among the best Cos Let-

tuces at the present time. More recently a very large amount of great excellence, named by my house Mammoth, appeared, and is very popular. White Heart, intermediate colour between Paris White and Green, deserves a popular introduction of recent years. With regard to Lettuce, the number of varieties now available is enormous. All the Year-Round was amongst the first introductions, and so good is it that it has been honoured several distinctive names. Wheeler's Tom Thumb, Perfect Gem, Standwell Green, and others are excellent largely in use; while more recently, Commodore Favourite, and Daniel's Continuity are improved to a great merit, the two latter standing longer than others without running to seed.

Recently my house has introduced the Intermix variety resulting from a cross between the Cabbage Lettuce, which is highly prized by many.

THE MELON

has advanced during the past sixty years by leaps and bounds. Every year witnesses the advent of new varieties, and the Fruit Committee of the Royal Horticultural Society can testify to the constant succession of aspirant honours.

In 1837, gardeners depended upon the Cantaloup, fleshed, Green-fleshed, Lord Sondes, and Queen Pocket. In 1842, Windsor Prize Green, and one or two scarlet-fleshed kinds, were distributed. Ten years later, Beechwood, Bromham Hall, Victory of Bath, and standard varieties were grown, followed at short intervals by Scarlet Gem, Blenheim Orange, Hybrid Cashmere, and Green, Hero of Lockinge, the latter still retaining its place as the best Melon for frames. So easy is the task that it has acquired the reputation of being essentially an amateur's Melon.

In connection with improvement in Melons, much work has been done by Mr. Owen Thomas of the Gardens, Mr. Wythes of Sion House, Mr. Chas. Ross, and many others. In 1894 we had the pleasure of introducing a handsome white-fleshed variety, raised by Mr. T. named Royal Favourite, and other noteworthy Melons also emanated from the Frogmore Gardens.

ONIONS

were represented sixty years ago by Blood Red, D. Silver-skinned Globe, James Keeping, Lisbon, White Brown Spanish, Portugal, and some of the Tripoli varieties. While most of the types have undergone more or less improvement, special attention has been given to the class. The Reading was a valuable selection, and followed by Improved Banbury, named after a town which has long been popular for its Onions. The late Mr. J. of that place introduced many fine types, such as R. Park, The Wroxton, Anglo-Spanish, and others. B. Cross, a comparatively recent introduction of fine quality also hailed from the same town.

The justly celebrated Allis Craig (with Cranston's sior, a very similar Onion), has caused quite a revolution in this vegetable. One celebrated grower last season exhibited twelve specimens weighing no less than 37½ lb., an enormous weight for this country, which would have startled growers of the olden days who had to be content with specimens weighing only a few ounces each.

Until quite recently it had not been possible to obtain the fine Spanish Onions of the grocers' shops, and all specimens grown in this country are not often so large as imported bulbs, some very fine Onions can be grown in the seed in heat in January and transplanting in March.

THE PARSNIP

has certainly been much improved since the Guernsey Hollow Crown were the only available sorts, although very great increase in the number of varieties can be seen.

As late as 1852 the only one quoted in a leading work was Hollow Crown. The Student, obtained by Professor Buckman, by continual selection from the Parsnip, and distributed by my house first in 1860, regarded as a popular variety; and has been since successful at shows. Quality in a Parsnip is almost a matter of selection, and in that way the fine types cultivated have been obtained. Carter's Maltese is a distinct advance, and is still widely grown. Quite recently at the Reading Show, where the general opinion was extensive and fine a collection of vegetables was never staged in competition, some of the collections contained remarkable specimens of a new variety called Tender-an. This is certainly distinct from other kinds, and its quality which has not hitherto been reached in this vegetable.

SPINACH

No great advance was made in this vegetable until years ago, when the Victoria and other similar strains were introduced. It is true that many varieties bearing mental names have been grown, some standing rather than others before running to seed, but the difference only slight. With the advent of the Victoria, however, the duration of the crop was greatly prolonged, and at present this variety has been surpassed, and we now have both in the round and prickly-seeded sections, the Spinach which remain good weeks after others have gone to seed.

Time will not permit of my referring to Parsley, B. Vegetable-Marrow, and some other vegetables, and pass on to

THE TOMATO

which has increased in popularity to a greater extent more rapidly than any other vegetable referred to in paper.

A proof that it was not much cultivated in the early years of Her Majesty's reign is shown by the fact that in a wholesale list published in 1852 the only Tomato mentioned is the common Red. It is within the last quarter of a century that such an enormous impetus has been given to the growth of Tomatoes, in consequence of the more cultivated taste of the masses of the people, and it is now found in almost every garden from the cottager's upwards. The Queen's gardener, Mr. Thomas, has identified himself with its improvement, and Frugmore Prolific is one of the best sorts grown at the present day.

The introduction of the Perfection type was the prelude to that of many others, and now the number is legion. New selections are plentiful enough, as our own trials of over 200 lots this year go to show. The question which is the best Tomato admits of a multiplicity of varying answers.

To mention in detail anything like the whole of the varieties which deserve notice would take up too much time, but for earliest outdoor use, Conqueror, Earliest of All, and Early Ruby, are popular kinds. Fine shapely fruit, and plenty of them, are produced by Isid Gem, Eclipse, Best of All, Duke of York, and Ham Green Favourite; and in yellow varieties, Golden Nugget as a small-fruited kind, and Golden Queen may be relied on to ripen early and produce good crops.

Strange developments, in which the fruit (seemingly) partakes of the character of the Peach, are observed in certain kinds, and the crossing of the Peach-Tomato with Perfection has resulted in some charming types, amongst the best of which is one introduced by my house last year under the name of Peach-blow. Certainly no gardener in 1837 ever dreamt of the fruits now commonly grown.

With white, yellow, pink, ruby, and scarlet kinds, not to mention the varying sizes and shapes, there is a wide choice for the most fastidious, both as regards external appearance and flavour.

GARDEN TURNIP.

A brief reference must be made to the garden Turnip. In the early days as many yellow as white varieties were offered, although the demand for the former has certainly not increased in proportion to that for the white-fleshed kinds.

Amongst the many improvements may be noticed Veitch's Red Globe, Snowball, Dobbie's Model, and Go den Ball, while the Red and White Millans are varieties which arrive at maturity quicker than any other Turnip. These should not be confused with their prototypes the Red and White Strap-leaved, which have almost had their day.

Several important sorts have been imported from the Continent in addition to the Millans, but much selection and improvement has been necessary to make them worthy of a place in English gardens.

POTATOES.

It will obviously be impossible for me, at the close of this lengthy paper, to attempt to describe at all adequately the improvements effected in the Potato during Her Majesty's reign, and as I have already in my paper on "Potatoes," published in vol. xix., No. 3, of the *Journal of the Royal Horticultural Society*, dealt somewhat fully with this subject, I must content myself now with the fewest possible remarks. As long ago as 1836, Messrs. Peter Lawson & Sons published descriptive list of 146 varieties, and amongst some 45 of the principal of these I only find one which is still cultivated, viz., the Early Ashleaf. There are, besides these, some familiar names, such as Early Shaw and Dons, but the remainder must have passed out of cultivation at least twenty-five years ago.

In 1852, the old Walnut-leaf Kidney, Early Oxford, Forty-fold, and York Regent were grown—all sorts of royal merit in their day, but now seldom met with. That excellent Potato, Paterson's Victoria, was widely cultivated up till 1850, but it would be difficult now to find an acre of this variety true to name. The fact that almost all these have disappeared from sight does not of itself necessarily prove that they were worthless, or even inferior to others grown at the present time; for it is generally admitted that the majority of Potatoes will not maintain their full vigour of growth and constitution beyond a certain time, the limit varying with each sort. This is not to be wondered at when we remember that each year's growth is but the prolongation of the life of the plant, which apparently had completed its work when the haulm died the preceding autumn.

At the same time, I have no doubt whatever, that even if we could reproduce such favourite varieties as the Regent, Paterson's Victoria, &c., in all their former excellence, and plant them by the side of the best Potatoes of to-day, we should find very great progress had been made, not merely in productiveness and power of withstanding disease, but also in favour—a point in which the older sorts are often supposed to have excelled. Besides this, we have in Ring-leader, Al, Early Puritan, &c., first-early sorts which are ready for use long before the so-called early Potatoes of twenty-five years ago, and also several second-earlies, such as Beauty of Hebron, Supreme, and Windsor Castle, which certainly were not equalled by any of the older varieties in their own section. Whether these will still retain their good qualities unimpaired twenty-five or fifty years hence, no one can say, though in all probability, as they themselves are instances of the survival of the fittest, in so far that they were chosen from thousands of less promising seedlings—several of them will doubtless greatly exceed the limit of age reached by older sorts.

In the late and maincrop section nothing has yet approached the Magnum Bonum in popularity, and it is certainly at least as good now as when introduced by my house twenty-one years ago. There are many other very similar varieties, but on the onset scrutiny I have failed to

detect any point in which they differ from the Magnum Bonum, and I have generally found when any difference has been suggested that the sorts in question were not grown alongside under the same conditions, or else that the seed had been obtained from different sources, a change of seed often producing a marked contrast in two rows of the same variety.

I must not leave the subject of Potatoes without mentioning such names as the late James Paterson, Mr. Robert Fenn, the late James Clark, and Mr. Archibald Fisdlay, all of whom have devoted many years, if not a lifetime, to the improvement of the "noble tuber," and to whom the whole horticultural fraternity and the community at large are so greatly indebted.

We have now passed in review all the leading kinds of vegetables, and I think, imperfect as this paper has been, we must all feel that the progress in vegetable cultivation during Her Majesty's reign has been little less than marvellous.

What the progress in the next fifty or sixty years may be no one can foretell; but on behalf of the seed trade I can only express the hope that it may be accompanied by a corresponding decline in the demand for older and inferior sorts, for the labour and anxiety of keeping the rapidly increasing number of varieties true to name is such as none but those acquainted with the details of seed growing can for a moment conceive.

The Discussion.

Mr. SHERWOOD said, having been in the wholesale seed-trade for forty years, he had followed the reading of the paper with great interest, and he bore testimony to the excellent manner in which Mr. Sutton had handled his subject. It might perhaps be asking Mr. Sutton to disclose trade secrets, but it would have been interesting to know the difference between the volume of trade done by Mr. Sutton's firm sixty years ago and the present time. For his own part, he thought they would all be astounded at the extraordinary demand that had sprung up for seeds during the past sixty years. That showed that the people not only wanted good vegetables, but plenty of them.

Mr. GEORGE BUNYARD said he could go "one better" than Mr. Sherwood, as he had been connected with the retail seed trade for forty-two years. For that reason he had followed the paper with more than ordinary interest, as he considered it astonishing that Mr. Sutton had been able to rake up all those old varieties which had long since been discarded. With regard to the garden Pea, Mr. Sutton said of the No Plus Ultra:—"Of its class, as a tall late Marrow-Pea, it is doubtful if any later introduction has ever shown, comparatively, a greater advance on previous kinds." He would say that in the Alfred the Great they had got all the qualities of the No Plus Ultra, with two or three more Peas in the pod and a more vigorous growth. Mr. Sutton had spoken of the difficulty of selection after Peas had been hybridised. He (Mr. Bunyard) knew that many good Peas had been utterly lost because people got tired of following up the selection. As to the old Peas, the increase in length of pod combined with shortness of haulm in the Woodford Marrow, had been marvellous. Great progress, indeed, had been made in the cultivation of all Peas, especially in preserving them during a hot dry summer. As to Runner Beans, a most remarkable thing had happened through hybridisation. In many cases if white seeds were sown, they reverted to their original form; and if red seeds were sown, they reverted to white, showing, he imagined, their hybrid character. With regard to Red Cabbage, very few people understand how excellent they are when cooked. It was a most delicious vegetable. True, its colour is somewhat objectionable, but anyone who had once tried it would be quite willing to overlook that point; it, of course, required a considerable amount of cooking. As a general rule, he would discountenance things being over-grown. The true test of a vegetable lay in the hands of the cook, and the smaller the vegetable the more likely it was to get cooked right through. In dealing with Tomatoes he noticed that Mr. Sutton had omitted the Conference Tomato, raised in connection with the Chiswick Conference some years back. He would like to bear testimony to the marvellous work done by Messrs. Sutton in regard to the Potato; but he could not help thinking that one great mistake had been made in sacrificing, in many cases, good flavour for a big crop. The Windsor Castle was one of Messrs. Sutton's triumphs, being one of the finest Potatoes ever grown. They owed a debt of gratitude to the Americans for introducing the Early Rose; but, taking things all round, he thought there was no Potato for field or garden culture equal to the Beauty of Hebron and the Puritan. Turning to another view of the question, Mr. Bunyard spoke of the false policy of buying cheap vegetables, characterising it as the greatest folly that could be perpetrated. He constantly saw vegetables advertised for sale which could not be grown for the money. Very few people had any idea of the great care and attention necessary in making a proper selection, not after the first or second attempt, but after a lapse of years. There was a tendency on the part of all vegetables to revert to some former type, and that required the greatest watching. He would, therefore, counsel people not to buy cheap seeds at any price. In conclusion, he said that Mr. Sutton had omitted to mention that great Potato-raiser, their friend Mr. Chas. Ross, of Welford Park Gardens.

Mr. Fyfe, of Messrs. Dobbie, said that many Peas were sent to Chiswick without any definition, and he would suggest that in the next year's publication of the Royal Horti-

cultural Society, people should be asked to send in proper descriptions, so that the Superintendent could have the older varieties grown side by side with the new. That would be only a fair test.

The chairman said there was one tendency at the present day which ought to be checked, and that was allowing old friends to appear under different names. At Chiswick they had some thirty varieties of Beet sent under different names, but upon examination there were found to be only five different sorts. As to new Melons, at least nineteen out of twenty that came before them were worse than their parents.

Mr. SUTTON, in reply, said much valuable work was done at Chiswick, but trials to be of value should be greatly extended. It would be better to have a Pea trial once every four or five years, and to do it exhaustively, than to but half do the work year by year. With regard to the Conference Tomato, it was one of the very finest types. As to the Potato, it was necessary to have a good crop, but they should also be determined to have the finest quality possible.

THIRD DAY'S CONFERENCE.

CULTIVATION FOR MARKET DURING HER MAJESTY'S REIGN.

Mr. Wm. Marshall, chairman of the Floral Committee of the Royal Horticultural Society, presided at the third day's Conference, when Mr. Asabeo, superintendent of Covent Garden Market, read a paper on the above subject. Mr. Asabeo said the Jubilee year had led to many interesting comparisons between the state of things existing at the present time and sixty years ago; and the annual show and gathering of the Royal Horticultural Society seemed a most suitable opportunity for reviewing the gardener's work during that period. He then traced the history of the growth of the garden from the commencement of history, remarking that originally they must suppose that every man was his own gardener. As the world became peopled, towns sprung into existence, and with these the market gardens, which supplied the wants of the community. Further great changes were brought about by the introduction of steam, which had altogether altered the conditions of life. The market gardener, driven from his suburban holdings at Battersea, Chelsea, Peckham, Deptford, and elsewhere, had to seek for fresh fields. The writer then gave an interesting description of the old-fashioned gardener, who religiously refused to depart from the hard and fast rules laid down by his forefathers, and proceeded to deal with the modern aspect of affairs. Dividing his paper into three main heads—vegetables, fruits, and flowers—he said, with regard to vegetables, that the cultural details of sixty years ago, with very few exceptions, remained the standard of the present high perfection. It was in the direction of earlier and improved varieties, and increase in quantities rather than in methods of culture, that comparisons would most tell. The cultivation of the Asparagus had shown the most remarkable progress. Many thousands of acres of this wholesome spring delicacy had been laid down. In the Worcester district alone there were 4000 acres, each acre producing 40,000 stalks, or 400 bundles.

CULINARY

exhibited another example of extended cultivation; and with regard to Peas, the most important summer vegetable, great strides had been made, especially in the Essex district, which had been fostered by the Great Eastern Railway.

ONIONS.

The introduction of the Spanish Onion had had a considerable effect on the improvement of varieties. In 1896 over 6,000,000 bushels of Onions were imported into this country, so that it could not be considered that we were overburdened with our home supply of Onions.

POTATOES.

The number of acres in cultivation in Great Britain in 1896 was 563,741, representing 3,562,235 tons. Lincoln was the largest Potato-growing county, possessing 57,638 acres, and growing 400,709 tons last year; Yorkshire had 51,495 acres, yielding 326,849 tons. On one day last season 1100 truck-loads of Potatoes arrived at the Great Northern dep't. There was still a very large importation of early Potatoes from the Canary Islands, Jersey, and Holland, valued at about £1,000,000.

BROCCOLI AND CAULIFLOWERS.

Coming to these valuable vegetables, a large quantity of Cauliflower was imported from Italy. Of the English varieties, Veitch's Autumn Giant was the best, and its popularity was largely due to its coming in at the beginning of autumn.

RHUBARB.

The present system of forcing was better than the old methods. In the season, 50 tons were brought into the London market in a day. In the United Kingdom there were 32,006,000 square feet of glass used for the forcing of 735 acres of Rhubarb, and the glasshouses, if they were 15 wide, and placed end on end, would reach 400 miles. After the Rhubarb had been pulled, the roots could be returned to the open ground for recuperation.

SPINACH.

is largely cultivated now; and as to Mushrooms, these required watchful supervision, with possibly much disappointment before success could be gained.

SALADS.

except for Mustard-and-Cress, we were almost entirely in the hands of the French producer for our early supply. He

looked forward, however, to a cheapening of glasshouse materials and frames to enable us to compete with the foreign and Channel Islands' producers.

FRUITS.

Fruits came next, and the speaker said that Kent deserved its title—"The Garden of England." With respect to Apples, the English producer was brought face to face with the American producer, and varieties should be grown for selling in the English market before the American fruit could arrive. The best market Apples were, Cox's Orange and Blenheim Orange Pippins, Lane's Prince Albert and Northern Greening. As to Pears, the best were Williams' Bon Chrétien, Pitmaston Duchess, Hessel, Louise Bonne, Catillac, and Winter Nellis. The best Plum was appropriately named Victoria, and Rivers' Early was a most valuable market variety. As to Dutch Plums, these were not in it as to quality with the English Plum, and the French Plum was over before ours was ready. Passing from Cherries, which were largely grown in Kent, the writer said that the Cornish and Southampton fields had done much to drive away the French Strawberry, and these were being assisted by the South Western Railway Company. British Queen Strawberry had no equal, but its cultivation was difficult. Sir Joseph Paxton was a good packer and a brisk flavoured variety, Sir Charles Napier was too soft, The President was a good old midsummer fruit, but the Royal Sovereign was the best of the newer varieties. Currants, both black and white, should be more largely grown. The Raspberry, a fruit that is much grown in the fields in Kent, and elsewhere, was a difficult crop to handle, and more Raspberries seemed to go into the jam factories than into the market.

FOREIGN IMPORTS.

Of small fruits which can be grown in this country enormous quantities were imported. In 1896, 6,177,193 bushels of Apples came from abroad, valued at £1,500,000. Of Pears there were imported 483,823 bushels, valued at £206,674; 560,246 bushels of Plums, valued at £241,782; 219,367 bushels of Cherries, valued at £105,246, or a total of 13,641,871 bushels of raw fruit, representing a value of £5,540,069, or an increase of £2,000,000 since 1871. He believed that if we could depend upon our climate, or had sufficient capital to enable us to wait on effort so as to extend our fruit culture, we should be amply rewarded; but the uncertainty of our climate was very much against extended fruit culture.

Mr. Asbee then displayed a box containing three dozen Californian Pears, and some Californian Plums, which he said were excellent in quality, but he doubted whether they could be put on the market at popular prices. He then advocated more effective methods of carrying on their work on a large scale, and alluded to the great efforts that had been made at Worthing, where there were now 650 glass-houses rated as agricultural land, and paying as such £8500 a year. If they took Covent Garden as a centre, a radius of fifteen miles would include most of the glass-houses in the country. The Lee Valley contained the most, and next came the Thames Valley, and Finchley, and then Bexley and Swanley in the more remote districts.

CUCUMBER.

The present system of cultivation has had the effect of driving the Dutch article from the market, and if people only understood the value of this as a vegetable as well as a salad, its consumption would be very much greater. Mr. Asbee next dealt with

FLOWERS.

He said nothing so much marked the advance of our working and middle classes in material progress, and in improved and refined taste, as their increased expenditure on flowers. In all conditions of life, and under all circumstances, this was seen, and flowers were now shedding their delicious perfume everywhere. Millions of potted flowers were sold annually; the trade in cut blooms was increasing enormously, and in this matter the English grower stood unrivalled. The trade in the Narcissus from the Scilly Isles had grown tremendously since 1885, and during the season it was not an uncommon thing to see 1600 boxes of these flowers arrive at the London market in one day. Cut flowers added to the pleasures of life, and their growers might on that account alone take a high standing among their fellow citizens.

In conclusion, Mr. Asbee said there was no doubt that the industry would increase, but here he would say a word of caution. The agricultural crisis through which we were passing had been due not only to the decrease in the values of produce brought about by foreign competition, but partly to fictitious value attached to farms through the competition of the retired mercantile man and other capitalists, who regarded farming as a healthy and a profitable investment for their capital. He saw signs of a similar feeling with reference to market-gardens and cultivation under glass; and although there was still room for further extension, he felt it his duty to advise a cautious policy and a due acquaintance with the details of the work before entering upon any rash outlay which might lead to loss and disappointment.

The Discussion.

Mr. Roupell expressed the pleasure with which he had listened to the paper, and he considered it a very great research. There was, however, one omission, and that was, the paper contained no allusion to the invasion from the Antipodes. Tasmania, and the other Australasian colonies, were preparing to extend their cultivation of fruit, and a list had already been supplied

of what the former country was able to do. He had had from the colony of Victoria a very handsome offer, if he could introduce to the colony a good dessert Apple, which could be put on the London market early. He had suggested one or two names, but our early varieties were not adapted for keeping. The sample sent out should be a good early Apple, and most pleasant to eat when taken from the tree. It should therefore be an Apple with some of the character of the King of Pippins, or the new Allington Pippin, that should meet the want. He was convinced that the supply of a good Apple created a demand, and that people when they had been accustomed to pay 4d. and 6d. a lb. for good Australian fruit, would not hesitate to pay a better price than they had been in the habit of paying for good English fruit later in the season. For that reason he should look with hope rather than despair to the prospect of our having Australia to compete with us. He was sometimes amused by the remarks made by amateurs and gardeners in the horticultural press, as to the high quality of their produce. He wished those writers could pay a visit to the establishments of P. Kay, Ladds, or Rochford. Such a visit would take the conceit out of them. He had visited the establishment of Peter Kay, and was astonished at the Grapes, the bunches being as big as horse's heads. He thought the Royal Horticultural Society might yet do a great deal for market-growers, by encouraging them, and giving facilities for exhibiting their produce at the fortnightly and annual shows.

Mr. George Bunyard said, "Mr. Asbee had advised a large increase in the plantation of Currants. Unfortunately, during the last few years a dire calamity had seized the black Currants, and the mite *Phytopus* had increased to such an enormous extent, that large plantations had to be entirely given up. Red Currants were, no doubt, very useful, but the importation of a large quantity of cheap wines had almost done away with that old English beverage, the Currant-wine. With regard to the black Currant, the trouble was that they had not been able to find anything that would kill the mite without killing the trees. As much young wood as possible should be kept on the plant. Much discredit had been cast upon this wonderful industry of fruit-growing by amateurs and others who made grievous mistakes in their methods of treatment, and did not forget to air their opinions in the gardening and daily papers. There was no risk if people would take a wise view of the question. A man should not put all his eggs in one basket, and he would find his profits remunerative. A good haul should not be expected every year. He suggested that farmers and fruit growers should combine more than they did for mutual protection and mutual benefit in fighting the excessive competition on the part of continental growers. As to Peaches, there was no doubt that the large sizes would always produce fine prices, but they should be sent to market in the best condition, and it would pay any grower better to keep his rubbish at home rather than put it upon any market. With regard to pot-flowers, the Jubilee had seriously interfered with their sale. A fever of patriotism came over the people who would only buy red, white, and blue kinds, and he had a great number of pots on his hands, which in other years were always sold out.

Mr. Asbee, replying to a hearty vote of thanks, said the Australian fruit did not touch our Apples, as their seasons in no way clashed. With reference to the Californian fruit on the table, it was grown by Mr. A. Block. Californian Pears could be sold in the London markets two weeks after they left the trees. The cost of transit for the box before then was 4s., and the cases of Pears (about three dozen), could be sold for between 8s. and 12s. per case.

The Chairman did not think the Pears' keeping quality was very good. One day, when opened, they were green, the next day they were fit to eat, and he supposed on the following day they would be rotten.

Mr. Asbee said all Pears were liable to rapid deterioration. The Conference then ended.

Scientific Committee.

OCTOBER 12.—Present: Dr. M. T. Masters (in the chair); H. J. Veitch, Rev. W. Wilks, Dr. Russell, and the Rev. G. Henslow, Hon. Sec.

Acorn Cups Malformed.—Mr. French of Felstead sent specimens of this not uncommon phenomenon. It appears to be due to an arrest of the flower, probably by some insect attack, when the scales of the cup become enlarged and free, as in the Artichoke gall.

Melons Diseased.—Specimens were received from Mr. J. Fraser Smith, of the Gardens, Cullen House, N.B., who writes as follows:—"The disease attacked my crop last year, and has done so again this, in both a sudden and deadly manner. An entire crop of twenty plants has perished in a few days. The disease first shows a spot on the leaf, then a part of the stem gets affected, and in two or three days the whole plant collapses. It is only at a certain time of the year, for the first crop in both years, which was grown in the same house, finished without any signs of it—i.e., about the early part of August; while the second crop, about half-grown on the opposite side of the path, has all gone, as also a later batch planted on the same side as the first ones. Out of thirteen plants ten went off in one day. Two young Cucumber plants have also died in the same way, after they were 4 feet high." The following report has been received from Mr. Massee, of Kew:—"The Melon disease is caused by *Scolecotrichum melophthorum*, Prill., a parasitic fungus. The disease is common in France, but I am not aware of its having previously been observed in Britain. Burn all diseased plants, for if they be allowed to

rot on the ground, a recurrence of the disease would almost certain next season. Under any circumstances would be advisable not to use the same ground for Melon growing for at least two years, as the fungus-spores probably abundant in the soil."

Parrot Tulips Seeding.—Mr. Wilks brought ripe pods of this variety, which he had crossed with the pods from other kinds of Tulips growing in his garden. It has been stated by growers that the Parrot Tulip had not been known to bear seed at all, and Mr. Henslow observed that some bulbs received from Mr. Barr, in every case the pods were abortive. It is proposed to raise plants from the seeds thus obtained.

Abies bracteata Cones.—Fine specimens were received from Mr. A. Harding, The Gardens, Orton Longueville, Leicestershire. They were borne by one of the finest specimens of this species in England. The tree is a native of South California, growing in Santa Lucia, and is in danger of becoming extinct. The cones are remarkable for their long bracts.

Calceola toona Fasciated.—A remarkable specimen, consisting of a spirally-coiled, flattened branch, two of the ends being welded together, was exhibited by Dr. Masters. The specimen came from Dr. Franceschi, Santa Barbara, So. California.

Abies balsamea.—A specimen was received from the Noble of a young plant which had developed a globe-tuber-like excrescence below the soil. Similar cases have occurred some years ago in the same grounds, but the cause is not traceable at the present state of growth, though possibly be due to some injury by insects at a very early stage.

Juniper Berries, Gymnospermous.—Dr. Masters exhibited some berries of the common Juniper, received from Schröter, of Zurich, remarkable for the three coherent berries not having become fleshy enough to close in upon the seeds so that the latter remained visible, free, and strictly "gymnospermous," as in the previous condition of the ovules.

Trapa natans, fruit.—He also showed specimens of Water Chestnut from the Lago di Muzzano near Lugano, having four knobs upon them, which do not occur in ordinary form of this fruit. Specimens of another variety, *Verbanensis*, were shown from the Lago Maggiore.

Spruce Fir-cones, var.—He also showed cones of a variety *Picea Excelsa* having smooth-rounded scales, instead of the usual form. Dr. Schröter, who gathered it from Switzerland, referred it to *Picea medioxima*; but Dr. Masters observed that this variety is a dwarf alpine or arctic species, and regarded the specimen as a variety only of the Spruce.

Anthurium Spathe, Monstrous.—Colonel Beddome sent specimens having three spathe, and the spadix commencing to branch, exhibiting a semi-proliferous condition.

Plants Exhibited.—M. Lemoine sent a spray of *Tamarix kashgarica*, interesting as being a late-flowering species from Central Asia; *Panax sessiliflorum*, with large, dense bunches of black berries, probably from Japan; the Bagu odorant having a delicate but very evanescent odour of lemon, and double and semi-double sports of *B. sans florens*.

Galls on Roots of Oak.—Mr. Wilks brought remarkable specimens forming a large mass on the roots of Oak or Chestnut. They are also found on the roots of the Deodar. The galls are polygonal and wedge-like, so forming together a globular cluster about the root. They are produced by *Cynips* (see *Gardeners' Chronicle*, 1841, p. 732, and 1874).

DEVON AND EXETER GARDENERS' ASSOCIATION.

OCTOBER 13.—The first paper of the present session, given on the above date, was one on "The Qualifications, Duties of a Gardener," the essayist being Mr. J. Mayne to the Hon. MARK ROLLE, Bilton, Devon.

To be a thoroughly qualified and competent gardener, the essayist, the youth who chooses this profession should begin at the beginning. There was a desire to begin under glass, which was a mistake, as the kitchen garden was proper place in which to lay a foundation of the practical knowledge every all-round gardener should have. After years he might be moved into the flower garden for twelve months, and then to the various departments of glass, say not less than one year with the plants, and another the fruit department. His spare hours should be mostly in reading gardening books and magazines to extend his knowledge, and in recording in a diary the operations he has engaged in during the day. Such a record, for purpose of reference, would be found of great service in after years, if kept up, would show the approximate dates of doing certain kinds of garden work, as sowing, pruning, fruit-gathering, planting, transplanting, and other duties incidental to the different seasons of the year.

His experience as a journeyman, if he attends to his duties and takes an interest in his work, will soon qualify him for a foreman's place. As a foreman, he should make himself competent to take the head-gardener's place in the absence of the latter through sickness or any other cause.

As a head-gardener, punctuality as regards hours of labour and ceasing work, unless in times of pressure, should never be departed from. Discipline among those under consideration for them, impartial treatment, full control of the determination to lead, rather than be led, should be every gardener who wants to be in the front ranks of the gardening profession. The head gardener should, as

practicable, do the thinning of fruit himself; Grapes, of course, excepted, in large establishments, where it would be obviously impracticable. He should do the packing, or, at least superintend it when fruit or flowers may have to be sent to the owner at a distance. He should cultivate the art of decoration, acquire skill in laying-out ground. He ought to make himself acquainted with the various methods of heating garden structures. He should make a point of daily practice to inspect the houses to ascertain the temperature the first thing in the morning and last thing at night during the winter and spring.

Mr. Mayne advocated moving about to various parts of the country when young, and he thought that two years was long enough in one place as foreman or journeyman under ordinary circumstances, and that a change to another place in another county was an advantage. One of the chief requirements in a head gardener was to study the likes and dislikes of his employers in what the garden produced, studying to have abundance and succession of those things most required and appreciated.

The paper was carefully prepared, comprehensive, and practical; and at the close, an interesting and useful discussion, opened by Mr. Slade, gardener to Lord Poltmore, followed. The usual votes of thanks closed the meeting.

FUNGUS FORAYS, 1897.

Those who remember the past in connection with these annual excursions, cannot help, in this eventful year, recurring to the period when the fungus hunters were most numerous, and the forays at their best, when the Woolhope Club was in all its glory under the genial influence of the late Dr. Bull, and when the crops of fungi were so large, that now-a-days they would seem to be phenomenal.

For some years past there have been comparatively few fungi, and a much reduced number of hunters. One by one the old mycologists have departed from this to a happier hunting-ground, and the few who remember the "good old times" are sad in the remembrance. This year, so far as our experience goes, there has been evidence of a partial return to the prodigality of the past. More fungi have made their appearance in the woods; the weather has been delightful for the forays, but the novelties have been few or none.

The WEST KENT NATURAL HISTORY SOCIETY held its annual Cryptogamic Field Meeting on Saturday afternoon, Oct. 2, passing along the old route from Orpington to Saint Paul's Cray Common and Chislehurst. The attendance was better than for the past year or two, and the number of species collected somewhat increased, whilst the number of individuals has not been exceeded for many years. There were no novelties to be recorded, but amongst those who attended, there appeared to be a reviving interest, which was somewhat stimulated after tea by a practical demonstration, which the writer of this notice was requested to give. From the specimens on the table, the general structure of the larger kinds was indicated, and the principal features requisite to be borne in mind in the discrimination of species. Unfortunately, the influence of one hour of such teaching once a year, is liable soon to pass away.

The WESSEX FIELD CLUB held its annual Cryptogamic meeting in Epping Forest on Saturday, October 16; and, although it was a fortnight later than it should have been to have achieved its greatest success, it was eminently satisfactory. It is an unfortunate circumstance that of late years the Foray of this Club has been fixed at too late a date. The Woolhope Club almost invariably selected the first week in October, and experience has proved that one year with another—this time is the best. On the present occasion the greater part of the day was devoted to collecting; but, as the spoils did not arrive at head-quarters until dusk, and with half-an-hour of the important function of tea drinking, it will not be surprising to learn that nearly all the collections remained in the baskets, or were piled in picturesque heaps upon the tables. Under these circumstances, no unhappy referee could do anything towards arrangement, or the discrimination of species, so that, from a scientific aspect, the labour of the day was "love's labour lost."

The same remark applies here as was recorded above, that fungi were far more numerous than they had been for years, but there was no opportunity for ascertaining whether the various baskets contained anything new or rare. We recognized, however, *Amanita nidula*, which was first found at Epping some years ago, and *Boletus durissimus*, which is rare everywhere. By favour of Mr. and Mrs. Johnson, the headquarters of this meeting was Warron Hill, where upwards of a hundred foragers were kindly welcomed to "high tea." During the evening the usual meeting was held, and the conductors were called upon to report, which, on account of the circumstance above noted, they were unable to do with satisfaction to themselves or the club. Subsequently, Dr. M. C. Cooke was called upon to read a paper on "British Mycology During Sixty Years." This history commenced with the publication of "Berkeley's Fungi" in *Hooker's Flora Supplement*, and ended with the Jubilee year. It was shown how the number of recorded species had increased, with some attempt to determine the causes of this increase. And, as of more real importance, it was suggested how the knowledge of structure, diffusion, and life-history had gradually increased and was still increasing, so that not only a greater number of species had been recorded than had ever been recorded before, but we had a more intimate knowledge of

the possibilities of fungoid life than was even suspected half a century ago.

After the reading of this paper, the Chairman and several of the speakers thereupon alluded in laudatory and flattering terms to the great influence which the writer of the paper had himself exerted on the progress of British mycology. M. C. C.

EDINBURGH FIELD NATURALISTS AND MICROSCOPICAL.

THE annual fungus foray of this Society took place on Saturday, October 2, in Newbattle Woods, near Dalketh, under the leadership of the Secretary. The Marquess of Lothian kindly granted permission to the members for this purpose, and sixty-five species of the larger fungi were collected by twenty members in less than two hours.

Among the Agarics collected may be mentioned *A. (Mycena) purus* and *galericulus*, *Hygrophorus puniceus*, *Marasmius promatus*, *Paxillus involutus*, and *giganteus*, *Intense* and numerous clusters of the wood parasite, *Armillaria mellea*, were observed; the genera *Coprinus* *Lactarius* and *Russula* being as usual well represented. *Polyporus sulfureus* and *P. lentus* were gathered, but not a single *Boletus* was found in the woods. Specimens of *Hydnum repandum* were collected, and several species of *Clavaria* and *Lycoperdon*; and among the larger *Psizae*, *P. badia* was found.

On Saturday, October 16, a Cryptogamic excursion by the same society was held in Roslin and Polton Glens, under the guidance of Dr. Watson and the Secretary. The Cryptogamic flora of these localities was examined, and among the mosses collected were *Hookeria late-virens*, *Tetradon pellucida*, and *Neckera complanata*, all in fruit; and of the less common fungi, *Fistulina hepatica*, *Phallus impudicus*, and *Craterellus cornucopioides* were obtained.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending October 16.	ACCUMULATED.				No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.	
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.					
0	4 —	23	13	+	134 0	aver 5 +	184	34.3	19	29
1	3 —	33	15	—	13 +	24 7 +	165	23.6	31	33
2	2 —	41	6	+	33 —	75 4 +	147	20.0	38	35
3	0 aver	52	0	+	119 —	1.4 5 —	142	19.1	32	39
4	0 aver	47	0	+	55 —	113 0 aver	141	22.2	27	37
5	2 +	74	0	+	194 —	183 5 —	135	21.7	30	40
6	2 —	34	6	+	43 —	16 5 +	177	35.1	33	33
7	0 aver	51	0	+	106 —	95 4 +	164	27.4	21	35
8	2 +	72	0	+	203 —	140 1 —	169	34.1	21	40
9	1 —	36	1	—	12 +	6 9 +	190	37.5	25	31
10	1 +	61	0	+	121 —	61 21 +	178	35.9	29	33
*	2 +	97	0	+	311 —	80 2 +	178	28.7	21	42

The districts indicated by number in the first column are the following:—

- 0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

TRAFALGAR-DAY DECORATIONS.—As we go to press, Trafalgar Square presents a very animated appearance, being thronged with visitors. Under the auspices of the Navy League, NELSON'S Monument has again been decorated, rather less lavishly than last year, but with taste and appropriateness. A

large crown girds the column at about half its height. The crown weighs about 8 cwt., and is 6 feet in height. It is supported by an iron band, from which depend four garlands of Laurels, each about 60 yards in length, which entwine the column, also the lions, and thence to the ground. There are four exceedingly large wreaths of Laurel from various branches of the Navy League, and about the plinth of the monument there are festoons of evergreens, principally Laurel. The display of floral wreaths is not large, and the flowers used consist of *Chrysanthemums*, *Rhododendrons*, white *Carnations*, *Tuberose*, and little beside these. A very large anchor presented by the proprietors of *The Gentlewoman* in the name of the daughters of England, is pretty and rich looking. The anchor itself is composed of yellow *Chrysanthemum* blooms of various shades, over Oak leaves, and a wreath round the shank of the anchor consists of purple-coloured foliage of Maple. Across this runs the word NELSON formed by red-coloured *Chrysanthemums*. With the exception of one other wreath, there was little lettering on any of the devices. A combined wreath and anchor from the Woking branch of the Navy League is most singular. It is formed of dry, dead leaves, surmounted by a piece of blue ribbon. The whole was stitched on to a framework of wire-gauze, or similar material.

MARKETS.

COVENT GARDEN, OCTOBER 21.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms...	4 0-6 0	Mignonette, per doz. bunches...	2 0-4 0
Asters, 12 bunches...	4 0-6 0	Ochids:—	
Bouvardias, pr. bun.	0 4-0 6	Cattleya, 12 bms.	9 1-15 0
Carnations, pr. doz. blooms...	0 0-2 0	Odontoglossum crispum, 12 bms.	1 6-3 0
— per doz. bun.	4 0-6 0	Pelargoniums, scarlet, per 12 bun.	4 0-6 0
Chrysanthemums, p. doz. blooms...	0 6-2 6	— per 12 sprays...	0 4-0 6
— p. doz. bunches...	3 0-6 0	Pyrethrums, per 12 bunches...	1 6-2 6
Eucharis, per dozen...	3 0-5 0	Roses, Tea, per doz.	0 6-1 0
Gardenias, per doz. blooms...	1 0-2 0	— yellow (Pearls), per dozen...	1 6-4 0
Gladioli, various, per doz. bunches...	6 0-18 0	— red, per dozen...	0 9-1 0
Hyacinth, Roman, dozen sprays...	0 9-1 6	— pink, per doz.	1 6-2 6
Lilium Harriet, per doz. blooms...	4 0-6 0	— Safrano, p. doz.	1 0-2 0
— Lancifolium, per doz. blooms...	1 6-2 0	Roses, per doz. bun.	4 0-6 0
Lily of the Valley, dozen sprays...	1 0-2 0	Stephanotis, dozen sprays...	3 0-4 0
Maldenhair Fern, per 12 bunches...	4 0-8 0	Tuberose, 12 bms.	0 3-0 4
Marguerites, per 12 bunches...	2 0-4 0	Violets, 12 bunches	1 6-2 0
		White Lilac, French, per bunch...	5 0-6 0
		White Narcissus, French, 12 sprays	3 0-8 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz.	2 0-2 6	Mushrooms (Outdoor), per lb.	0 6-0 8
Beans, Scarlet Runners, per bushel	2 0-2 6	Onions (pickling), per pocket	2 0-3 0
— French, Channel Islands, lb.	0 9	— skinned, per bush...	2 6-3 0
Beetroot, p. bush.	1 6-2 0	— Dutch, per bag	4 0-4 0
Capitulum, Chilli, p. 100	1 6	— Albanian, bag	5 6-6 0
Cauliflowers, dozen	1 6-2 0	Salad, small, per doz. punnets...	1 6
Cucumbers, home-grown, select, per doz.	2 0-3 0	Shallots, per lb.	0 2
— 2nds, per dozen	0 9-1 0	Sprouts, per 4-bush.	1 6-2 0
Garlic, per lb.	0 2	Tomatoes, selected, per doz. lb.	4 6-5 0
Horseradish (German), per bundle	1 4-1 6	— Medium, do.	3 0-3 6
Mushrooms (Indoor), per lb.	0 10-1 0	— Seconds, do.	1 0-1 6
		— Channel Islands, per 12 lb.	2 6-3 0

POTATOES.

There has been no change in prices since last report, with the exception of an advance in Blacklands of about 5s.:—Hebrons and Snowdrops, 75s. to 100s.; Saxons, 70s. to 85s.; Maincrops, 75s. to 90s.; Giants and Magnums, 65s. to 75s.; Blacklands, 65s. to 75s. per ton; Belgium Kidneys, 3s. 3d.; Dutch Rounds, 3s. 3d. to 3s. 6d. per bag of fifty kilos John Bath, 82 and 84, Wellington Street, Covent Garden, W.C.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.		s. d. s. d.	
Adiantum, per doz.	4 0-12 0	Evergreen shrubs,	
Aspidistras, per doz.	12 0-30 0	in variety, doz. ...	6 0-24 0
— specimen, each	5 0-15 0	Ficus elastica each	1 0-7 6
Asters, various, per doz.	2 6-5 0	Ferns, small, doz. ...	1 0-2 0
Chrysanthemums,		— various, doz.	5 0-12 0
p. doz. pots	5 0-9 0	Foliage plants, per dozen	12 0-36 0
— specimen, or large plants, ea.	1 6-2 6	Heliotropes, dozen	3 0-4 0
Coleus, per doz.	2 0-4 0	Liliums, various, per dozen	9 0-12 0
Dracenas, each	1 0-7 6	Marguerites, p. doz.	6 0-9 0
— various, p. doz.	12 0-24 0	Mignonette, p. doz.	4 0-6 0
Eriks, various, per dozen	9 0-18 0	Palms, various, ea.	2 0-10 0
		— specimens, ea.	10 6-84 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples (Cox's Orange), pr. bush. 14 0-16 0	Nuts, Cobs, per 100 lb. 22 6-25 0
— (Ribston), bsh. 14 0-16 0	Pears, various, per bushel 4 0-10 0
— Dessert, in variety, per bush. 6 0-16 0	— small, bush. 2 0-3 0
— Culinary, in variety, per bushel 3 6-6 6	— stewing, per bushel 2 6-4 0
Blackberries, peck 2 0-2 6	— Californian, B. Hardy, p. case, about 4 dozen 9 6 —
Grapes, Gros Colmar, per lb. 1 6-2 0	— B. Clargau, per case (8 to 9 dozen) 10 6 —
— 2nd qual., lb. 10-1 6	— Glou Morceau, per case, about 4 dozen 9 0-9 9
— Gros Maroc, lb. 1 0-1 6	— D. de Coince, p. case, about 4 dozen 8 0 —
— Alicante, p. lb. 1 0-1 3	Pine-apples, St. Michael, cases containing 6 to 8... 4 6 5 0
— 2nd qual., lb. 0 6-0 8	— cases containing 10 to 12... 1 6-2 0
— Hamburgs, selected, per lb. 1 0-1 6	Quinces, per bushel 19 0-12 0
— 2nd qual., lb. 0 8-0 9	Walnuts, shelled, p. half-bush. 4 0-5 0
— Muscats, "Cannon Hall," p. lb. 2 0-4 0	
— Channell Islands per lb. 0 6-0 9	
— Muscats, selected, per lb. 2 0-2 6	
— Muscats, 2nd quality, per lb. 0 9-1 3	
Melons, each 1 6-2 0	

(Markets carried over to p. ix.)

TRADE NOTICE.

MR. JAMES WILLIAMS, for the last six years gardener at Foxley, Hereford, has taken the nursery establishment of the late Robert Lamb, Caythorpe, Grantham.

NOTICES TO CORRESPONDENTS.

ARAUCARIA IMBRICATA SEED: *Araucaria*. Prepare pots (32's) by well crocking them and filling them with sandy loam, and push the seed into the surface, almost level with it to the number of thirty per pot, placing the pointed or germ end uppermost. If the soil be moist do not afford water till it has become somewhat dry, and then afford a good application. The pots should be stood in a case or frame placed in an intermediate house or pit, and a sharp look-out kept for mice. The seeds do not keep long, and they should be sown forthwith.

AZALEA INDICA GRAFTING: *A. M. B.* The grafting of these plants may be done during autumn, winter and spring, if you have stocks as thick as wheat-straw of *A. japonica*, *A. Sir Charles Napier*, or *A. alba*. The stocks must be established in small pots, and grafting may be performed as side, cleft, or splice, the end of a shoot with four or five leaves being selected as the scion. Keep in a case on a mild bottom-heat till taken. In order to raise stocks, cuttings of nearly ripe wood should be taken when almost ripe, and struck in pans of sandy peat coated with sand in a close warm case, or seeds of the desired varieties may be obtained from artificially-fertilised flowers sown on the surface of pans filled with sandy, sterilised peat, and kept in a warm pit till germinated. Cuttings, however, give the quickest returns.

CORRECTION.—An error for which others are responsible was made in our last issue, when we attributed the paper on vegetables, read at the Crystal Palace, to Mr. Martin J. Sutton, instead of to Mr. Arthur W. Sutton.

DAHLIAS: *Constant Reader*. Put the old roots in a flat hamper or box, or on the ground in a hothouse in early February, covering them slightly with leaf-mould or other light soil. The roots will soon push up a number of shoots, which may be pulled off when 2 to 3 inches long, and without trimming, placed to the number of six round the edges of a small 18-sized pot, filled with sandy leaf-mould and loam, plunging the pots in a hot-bed of 75°, and be kept moderately close for a fortnight, when they will be found to be rooted, and must be put into a less warm place. In a week or ten days pot them off singly. If you have many cuttings, pots may

be dispensed with, and the striking done on a bed in a frame. This demands that a cutting when rooted be taken up and potted forthwith.

DAHLIA FLAMBEAU: *S. W.* You would be likely to obtain it from any of the Dahlia nurserymen.

DRACENAS DISEASED: *S. G. H.* Do not continue to propagate from diseased plants, but burn them all, and start with perfectly healthy plants.

FIGUS ELASTICA: *Constant Reader*. Take cuttings of ripened wood two years old, cut into 6-inch lengths, and strike in a close case, frame, or under a bell-glass in bottom-heat of 80°; or notch and layer the shoots of an old plant.

FERN FRONDS DISCOLOURED: *C. B. G.* We are at a loss to account for the discoloration, which is not uncommon this year on Polypodium and other species. We have heard of a number of *Athyria* have been similarly affected. It may be attributed to using raw manure with the leaf mould, and consequent development of fungus, which permeated the fronds through the roots; or the cause may be drip, cold water, or cold draughts.

GRAPE: *T. S.* It appears to be an American variety, with the name of which we are unacquainted. It is a very nice-eating, good-looking Grape.

ICE-HOUSES AND ICE-HEAPS: *Subscriber*. An enclosure made with a fence, 5 feet high, of boards fitted close together at the edges, will keep ice till July and August, if the heap of it put within the wooden enclosure is well-pounded, and there are at the least 30 to 40 one-horse cart-loads. The platform on which the stack is formed should be rather above the surrounding level, and slope slightly to the outside. If the weather remains frosty, it is a good practice to throw scalding water over the heap, so as, in a measure, to close the surface with a coating of ice, and thus prevent the ingress of air. The heap should be properly thatched to the thickness of 1 foot with reeds or straw, and the sides of the fence cased with sawdust, kept in position by means of thatched hurdles or rough boards. It is best to form ice-heaps under the shade of trees, or on the north side of a wood, and whenever the heap is opened for obtaining ice, the bare spot should be well secured from the air by means of clean straw.

INSECTS: *H. J. S.* Millipedes—devourers of decaying vegetation. The holes in the Carnation-stems may have been caused by weevil-grubs.

MARKET GARDENING: *A. R. A.* The town has a brisk trade in fruit, vegetables, and flowers in the season (July—October); at other times of the year we should suppose the trade would be dull, although the town is growing, and the resident population has increased greatly of late years. The climate is mild, and hard frosts rarely occur, as is shown by the exuberant specimens of Fig-trees, *Euonymus japonicus*, Myrtles, &c., met with in the town and inland. Hardy fruit, especially Plums, Pears, Apples, and Strawberries, come from Sandwich, Faversham, and other parts of the county; the wind-swept promontory being quite unsuitable for orchard-planting, although with tree-screens of *Pinus maritima*, *P. pinaster*, *P. austriaca*, Willows, pyramidal Poplar, and Sycamore, it would doubtless answer very well.

NAMES OF FRUITS.

* Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

W. E. P. 1, Cox's Pomona; 2, Hollandbury; 3, Tower of Glamis; 4, Hanwell Sourcing.—*J. Laure*. 2, Queen Caroline; 3, Hanwell Sourcing; 4, New Hawthornden; 5, Claygate Pearmain.—*W. Thomson*, 1, Beurré Rance; 2, Easter Beurré; 3, Josephine de Malines; 4, Gravenstein.—*W. Guy*, 1, not known; 2, Granges Pearmain; 3, Rymer Pippin; 4, Dumelow's Seedling; 5, not known, *W. R. F.* Pear, King Edward.—*J. E.* 1, Beurré de Capiaumont; 2, Windsor (specimen over-ripe); 3, Beurré Diel; 4, not recognised; Apple, Adams' Pearmain.—*Niel*, Pear, Vicar of Winkfield; 1, Ribston Pippin; 2, Cellini; 3, not known, 4, Queen Caroline; 6, Pear is evidently from the stock, and therefore worthless.—*E. Crapp*. 1, King of the Pippins; 9, Passe Colmar; 14, Marie Louise d'Uccle; 13, Beurré Diel; 20, Verulam.—*W. C.* 1, Beauty of Kent; 2, Hoary Morning; 3,

Lord Suffield; 4, Cellini; 6, Cellini; 5, not known.—*Roberts*. 1, Marie Louise; 2, Beurré Rance; Beurré Bachelier; 4 and 6, rotten.—*J. W.* Mère de Ménage; 2, Tower of Glamis; 3, St. Beesing; 4, Golden Noble.—*H. Oakley*, 1, 13, Barchard's Seedling; 14, Gravenstein; Lord Grosvenor.—*Sylvanus Fox*. 1, Alfriston Yorkshire Greening; 3, Beauty of Kent; 4, G. Noble; 5, Queen Caroline; 6, Lord Derby Naulton. 2, Beurré d'Amanlis; 4, Devon Quarrenden; 5, Duchess of Oldenburgh; 6, Beauty of Kent.—*Sidcup*, Kent. Alfriston (1).

NAMES OF PLANTS: *Correspondents not answering this issue are requested to be so good as to send the following number.*—*Wight*. 5, Chrysanthemum serotinum; 9, Plumbago Larpenis; 10, Gaultheria marginatum. You had better send the Asplenium to a nurseryman.—*Miss S.* Artemisia annua, 1, W. G. 1, Selaginella Mertensii; 2, S. viticulosa; 3, Strobilanthes Dyerianus; 4, Nephrodium medium; 5, Pteris tremula; 6, Platycladus rotundifolia; *J. P. K.* The large flower is Laelia Perrini; specimen with thick foliage is Sarcanthus terrefolius; the other is a fine form of Miltonia Russelliana, a very old but not common species.—*W. C.* 1, Nerine sarniensis.—*D. J. H.* Send your Asters to a nurseryman.—*A. B. S.* Proboscidea a species of Passion-flower; send when in flower *J. B.* Abelia triflora.—*C. R.* 1, Pinus ponderosa; 2, Pinus contorta; 3, Abies brachyphylla; *D. C. H.* Tropaeolum speciosum.—*J. F.* 1, L. cera sp.; 2, Euonymus europaeus (Spindle-tree); Cotoneaster Simonsii; 4, Phlomis frutescens; *C. B.* 1, Amaryllis reticulata, an almost evergreen stove species; 2, Hedychium coronarium.—*F. E.* 1, bulb of Amaryllis Belladonna; 2, Anthericum lineare variegatum; 3, Adiantum mundulum; 4, A. decorum; 5, Pteris longifolia; 6, P. aquilina (bracken).—*A. W. G.* 1, Liquidambar orientalis; 2, Spiraea callosa; 3, Symphoricarpos racemosus; *J. O. E.* 1, Dendrobium chrysanthum; 2 and varieties of Oncidium varicosum.—*J. M.* Paila Laelia Perrini.—*T. M.* Both the Cattleya Dorian aurea and the C. Warscewiczii (gigas) are very fine varieties.—*W. A. S.* Sternbergia lutea.—*W. C.* So far as we can judge by the specimens sent, the berried plant is Cotoneaster frigidus; the leaves, the of Rhus glabra laciniata.—*C. H. J.* A poor specimen but no doubt Alyssum maritimum variegatum.—*W. C.* The white flower and fruit is Araucaria (Phyanthus) sericifera; the rose-coloured flower is Mandaranda erubescens. Thank you, we have seen fruits of Stauntonia latifolia, and three specimens were figured in the *Gardeners' Chronicle*, February 19, 1876.

PERMANENT EGGING FOR RHODODENDRON BELLADONNA: *S. W.* Of dwarf shrubs, Rhododendron ellipticum, R. hirsutum, Azalea Davisii, A. mollis, Berle Darwini, Menziesia Irish Heath, in variety, Cornish Heath Erica vagans, E. cinerea in variety, E. Tetralix in variety, E. herbacea, Gaultheria procumbens, Pernettya mucronata, Leptospermum prostratum herbaceous plants, Aubrietia in variety, Campanula carpatia, Heuchera sanguinea, Plumbago variegata, Gentiana acaulis, &c.

SONERILA BERTOLONIA: *Amateur*. You will succeed in striking these plants from leaves in the same manner as Gloxinias are increased. You may undertake the raising of new varieties of the beautiful plants from seed, which, when the flowers are artificially impregnated, is abundantly produced and it is better to do this than to wait for natural fertilisation, which is sure to occur if the plants are not protected when the blooms are about to open the authors being specially formed for securing cross-fertilisation in this way.

SULPHURING A VINERY: *Constant Reader*. Do not for even when the Vine is at rest, it may be seriously injured by the fumes of burning sulphur. If you are determined to employ sulphur, you ought to put the Vines entirely outside.

TEMPERATURE: *J. B. Wilts.*—Recent calendar articles in these pages afford just the kind of information of which you stand in need.

VICTORIA REGIA: *G. D.* It is commonly treated as an annual in gardens, the seeds being sown in spring in a potful of loam, sunk to the bottom the water be not more than 1½ foot deep, of a tank or tub.

COMMUNICATIONS RECEIVED.—*M. H. S.*—*J. Veston* & Co. D. A. R.—*P. L. B.* New York.—*W. B. H.*—*W. F.*—*T. H. Smith*—*E. P.*—*R. D.*—*A. O.*—*D. T. P.*—*W. R.*—*W. H.*—*Heale*—*E. Conner*—*E. Cottam*—*E. M.*—*D. J.*—*J. A.*—*T. M.*—*H. C. P.*—*A. D.* & Sons.—*S. R.*—*A. W. G.*—*T. F.*—*M. F.*—*Winsford*—*S. P.*—*A. J.*—*J. C.*—*W. W.*—*A. M.*



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 30, 1897.

"THE SCOTS GARD'NER."

MORE than one edition of this epitome of gardening as it was practised in Scotland in the seventeenth century, has been published, and it cannot therefore be considered a rare work. But the first edition, "published for the climate of Scotland by John Reid, Gard'ner," and "printed by David Lindsey and his partners at the foot of Heriots Bridge, 1683" (Edinburgh), is comparatively rare. This is a small quarto of about 150 pages and four plates, and is very well printed, though a curious mistake occurs in the paging, without, however, affecting the continuity of the letter-press. The binding is very much like that in use in England a hundred years later, only cardboard is not employed for stiffening, but the same kind of white flaky material used in England about the middle of the seventeenth century.

The book is divided into two parts—the first, "Treating of Contrivance;" the second, "Treating of the Culture of Plants." There is also an appendix, "showing how to use the fruits of the garden," and a very short Calendar. While English works of a kindred nature abound with quotations from Greek and Latin authors, this is remarkable as containing not one classical quotation. It is also free from references to planetary influences and other superstitious observances. The style is condensed, particularly in the second part, consequently a large amount of matter is contained in a small space. A few Scottish expressions are used, such, for instance, as "Aprile," "Aple," "Plume," "Turneeps," "Currans," "Mell," "delve," "stove" instead of "stew," and "sharers" instead of "slices," all still in general use in Scotland.

The first part is divided into eight chapters, of which four treat respectively of the House, Drawing by Scale, Levelling, and Measuring. The other four show "How to make Avenues and Walks;" "How to Plant Thickets and Orchards;" "How to Make the Kitchen-garden," and "How to Make the Pleasure-garden." These are the more interesting, but in the chapter devoted to the House, it is shown that the latter was used as a centre from which the Scots garden designer worked. The gardens all but surrounded the house, on the east and west sides of which were "Cherrie-gardens; a proper place also for Gooseberries, Currans and Strawberries. . . . On the south side the house there is the pleasure or flower-garden, called *parterre*; at the two sides thereof kitchen-gardens; then another walk ending in a semi-circle, leading out to the lawn or deer-park." Reid

notes that "the kitchen-garden is the best of all gardens." It was surrounded by a wall with border and walks all round, and was intersected by a walk from the house, and sometimes also by a cross-walk. "The bordures of your kitchen-garden round by the walks may be boxed with Thyme, Lavender, Hysop, Rue, &c., the next with Parsly, Strawberries, Violets, July flowers, &c. Cherrie-gardens and physick-gardens, with Sweet Brier, often cut, or Box cut three times per annum, as Aprile, June, August."

Pleasure-gardens were divided into "walkes and plots," with a "bordure round each plot." "For the orderly planting of flowers there may be three wayes."

(1). In borders of mixed plants.
(2). Also in borders, "but set five rowes of each kind cross the bordure, so as twenty-five of each sort may stand in a geometrical squair. As if you set a squair of Tulips, a squair of Boar's-ears, a squair of Crocuses, a squair of July flowers, a squair of Anemonies, and a squair of Coualsips, and so a squair of Tulips, another of Boar's-ears, &c."

(3). "Plant every kind in thickets by themselves—six rowes in the bed, the dwarfish may be eight rowes." Of wildernesses which were introduced into Scotland about this time, no mention is made, but in a plan showing the method of laying out gardens, &c., round the house, there is distinct evidence of French influence in the arrangement of avenues and drives.

The second part contains seven chapters, the first of which treats of the several methods of propagation in a manner characterised by much clearness and in detail. The following paragraph on raising plants from seeds is interesting: "Abeit I use for the most part to plant and sow every species by themselves, yet you may sometimes use mixtures, as Carrots and Radish, in one bed, because the Radish may be gone e're the Carrots require much room. Among new set Liquorish sow Onyons, Radish, Lettice, and you may sow Radish, Lettice, Parsly, Carrats, Parsneeps together, gathering each in their season; the Parsneeps will stay till winter. And drop Beet-Rave or Parsly in your Onyon beds to stay winter after Onyons are gone. Also Beet-Rave, Skirrets, Beans at considerable distance in the intervalls of new planted Artichocks, also at a great distance among Cabbages, or in the edge of the furrows of other beds." He also advises to "Sow the strong and hardy deeper than the small and tender, and sow ebbet at spring than before winter, and deeper in light than a stiff soil." In the same clear manner the author treats of cutting suckers, layers, grafting, budding, and ringing.

The next chapter is devoted to the cultivation of the soil, &c., where the "English fashion of spades" for trenching is recommended, and the different kinds of soils with manures, burning, draining, watering, and making composts are fully treated. For the latter purpose he had a pit, into which he laid "All kinds or sorts, with stratus of earth, as horse, neat sheep, pigeons, and poultrie dung, Ferns, weeds, leaves, soot, ashes, sticks, sawdust, feathers, hair, horns, bones, urine, scouring of poudes, ditches, blood, pickle, brine, sea-water, the cleansing of house, of office, &c. Let them ly by a year at least, but not above two; then take them out, and their stirre, air, mingle and work them with fresh earth, or by themselves, till they become sweet." Of manures, it is noted that—"All hot dungs and manures are proper for cold,

stiff, and moist grounds; so all rotten and cold dungs and manures are proper for dry and hot grounds. All manures that retaine moisture are for poor, sandy, and gravelly soils." Examples are added of many kinds of manures, and of "lyming," and of the crops to be grown by their help.

In the section treating of hot-beds, "barley-straw, or the same mixt with bran, because it keeps heat long," is recommended." Of watering he observes:—"If you fear dry weather, differre not too long, but water while your ground is yet moist; differre not if you mind to water at all. When you do begin, continue it so long as you find occasion." Roses for watering-pots were unknown. This is the way the Scots gard'ner watered small seeds:—"I have often made use of a handful of small straw or hay, drawn as thatch, tyed in the middle, and at one end poured water with a cup, and shaken the same that it appeared like a gentle bedewing rather than a glutting rain."

The third chapter treats of forest trees, their propagation, methods of pruning, transplanting, &c., with list of trees. We have a larger list of trees now, but in practical matters we have advanced nothing. For example, it is advised that large trees be trenched round, the roots cut in, good soil firmed round them, and the tree left for two years, when it is in a condition fit to transplant with success. Again, holes are to be prepared for all kinds of trees by taking the soil out "a year before you plant, and in summer stirr and turne their earth, that no weeds grow thereon." In planting, it is recommended "not to plant deep, for they that do but cheat themselves." The best season to plant is in early autumn, as soon as they give over growing." Regarding pruning, full directions are given as to the best methods, and to cut close in to the stems, the best times being (1), October and November, and (2), in June.

Chapter IV. is of hedges or inclosure, and the chapter following on fruit trees is extremely interesting, as showing the advanced state of hardy fruit culture in Scotland over 200 years ago. This is what the author remarks on dwarfing stocks:—"To make dwarfe Apples, graff or bud on the Paradise or any that hath burry-knots, Codlings, Redstraks, &c., dwarfe Pears on the Quince; but no Pears holds well on it (that I have tryed) save red Pear, Achans, and Longavils (Longueville), but you may re-graff for varieties dwarfe Cherries on the Morella." A few years previous to this, Evelyn Worlidge and others note that the cultivation of dwarf trees budded on the Paradise for Apples and Quinces for Pears was then a novelty, but they do not mention double grafting. On transplanting fruit-trees it is remarked, "Plant not deep, but tempt the roots by baiting the surface with dungs to make them run ebb within the reach of the sun and shoures." In pruning, hard cutting, when young, is recommended; also, not to allow too many branches to remain, but to rub off superfluous buds, and to thin about mid-summer. To bring strong-growing barren trees into a fruitful condition, some of the strongest branches are to be cut clean out the centre of the tree at mid-summer; and root-pruning every third year is stated to be effective for the same purpose. In this chapter mention is made of the "Frontinak" Grape when grown against a south wall in some years ripening its fruit.

Chapter VI. is "Of Fruits, Herbs, and Roots, for the Kitchen," "the tenderest whereof are

Melons, and are not worth the while!" The Artichok is "a fine and lasting fruit!" Peas were set "in lines five rows in the bed." Thick sowing is discouraged: "Make the holes nimbly by the lines with a dibble $1\frac{1}{2}$ inches deep and 2 inches distance from another." Strawberries in like manner were planted "5 rows in a bed," but each "stock" was kept separate. "Sellery is like Parsly, grown 8 rows in a bed." It was also blanched in beds where it was planted "3 inches in the rows," but each of these 3 feet apart. "Coleflower" it is observed "is a fine very Cole," and late heads were preserved by taking up the plants and hanging them in a dry room. Among the "Roots," Potatoes are mentioned, and it is worthy of remark that Chambers and others who mention this esculent say that it was unknown in Scotland before the eighteenth century. Reid out the tubers into pieces each with an eye, and planted in March "5 rows in the bed." Potatoes were boiled then peeled, then "Chop and bruise them well, powre on butter, and set them on a coal; and if you please, strew a little cinnamon on them." "For want of butter take sweet milk." Some sensible remarks on hoeing and weeding close this chapter.

The seventh and last chapter is "Of some Physick Herbes, Shrubs, and Flowers." Many of the "herbes" were common weeds, but "Tobacco" is mentioned. The list of shrubs is pretty full for the period; and, indeed, a longer list of these and of forest trees is named than occurs in the very rare work by the Sixth Earl of Haddington, written fifty years later. There is also a good list of flowers; and the author states that July flowers were cultivated both in beds and in pots, and were propagated from seeds and by layers, which latter method he preferred, though he also notes, "I have raised many double by seed of my own reaping." Concerning Auriculas, he says:—"Bear-ears by offsets in the spring, or when the flower is past (viz., July); they affect a good natural earth well mixt with rotten neats dung. The finer sorts loves a little shade in summer, if in pots or cases you may transport them to such at pleasure."

"Great varieties may be raised from seed sown in pots, the soil aforesaid mixt with willow earth in October; take head of deep interring bairs-ears, sow them as purslain; set the potts and cases with them at the south side of a wall till Aprile, at which time they spring, and must be now retired a little, as is said; transplant in July to flower next spring, and neglect not to earth-up such as are apt to work out of ground, namely bears-ears."

Among other flowers named are "Stock July flowers, Hepatica, Holihoeks, Constantinople flowers (Lychnis chalcidonica), Pinks, Sweet Williams, Throatwort, Bell-flowers, Tulipas, Anemonies, Ranunculoze, Cyclamin, Chalcicums, Irise, Bulbose, Narcissus, Jacinths, Hellibors, Crown Imperial, Liliacs of several sorts, Pionies, Cynosorches, Tuberoze, Amaranthus, many annuals, &c."

The appendix treats on the gathering and storing of fruit, on making wines and cyder, and concerning the various methods of using vegetables as salads, pickles, and different ways of cooking. The following paragraph occurs:—"The French fruit succeeds not well with us—in England are good Apples, but Holland for ston-fruit, especially Peaches and Cherries, and Scotland for Pears."

Of "Aples" he states there was in cultivation "hundreds for both," "table and kitchen," and of Pears "multitudes." The calendar consists

of twelve pages, a page for each month of the year. It is apparently distinct from the rest of the book, as it is paged separately, and follows the conclusion. It is, however, obviously the work of the same author.

In laying down this unique work, the reader is at once surprised at the great practical knowledge its pages discover, and filled with regret that the author did not expand some of the chapters to a greater length, and especially those treating of the various trees, shrubs, flowers, and vegetables in common use at the period he wrote. *R. P. Brotherston.*

CHRYSANTHEMUM GOSSIP.

MESSRS. J. VEITCH & SONS (LTD.).—Although not regarding themselves as specialists in Chrysanthemums, like Mr. Jones, Mr. R. Owen, Mr. Godfrey, and others whose names will readily suggest themselves to the admirer of the flower, the newest in point of introduction, as well as a choice selection of old favourites, can always be found at the Chelsea Nursery, and these as well cultivated as it is possible, considering the closely-packed surrounding area, prevalence of fog in the autumn and winter, and the proximity to the Thames. The chief of these evils is fog, which glues, as it were, the florets together, setting up "damp," and destroying the beauty of a bloom, that falls a victim to it in a very short space of time. No variety is immune, although some, owing to the closeness with which the florets are arranged, their lack of substance, and the tangled masses of them, are more than others liable to suffer from this cause.

Our steps were first directed to the light, dry, narrow, span-roofed house, containing the plants carrying specimen blooms; and here, arranged on temporary staging, is exhibited the collection of novelties of this year, and those of '96 and '95. The plants are early this year, but the flowers were lacking size, as compared with previous years, for which the abnormal weather of the latter half of the year may be held accountable. *Liscarde Gentils*, as its name indicates, is of continental origin, belongs to the so-called "hairy" race of "Mums" of the Japanese section. The florets of this variety are linear, and the "hairs" are found on the margins and points only, and mostly have a downward direction; it is a white flower. *S. C. Probin* (1897) is a fine large incurved Japanese variety, which opens of a faint pinkish tint, which increases in depth of hue in the basal florets; the centre, however, is white.

In *Royal Standard* (Jones) we have a reflexed Japanese, a flower of a bright shade of chestnut, the reflex of the florets being what is called, for lack of a better word, old gold; it is an introduction of 1897. A sport from *Vivian Morel* has central florets of sulphur-yellow, and the basal ones tinged with yellow; it is new, but not considered sufficiently distinct for general purposes. Some plants of *Modesta* with large good blooms upon them were noted.

A seedling from *Viscountess Hamilton*, and named *Mr. F. Brewer* (R. Owen), with a sulphur-coloured flower, having florets of considerable width, is a striking novelty in incurved Japanese; *Elthorne Beauty*, likewise new, is a nice rosy-lilac coloured, reflexed Japanese, which is sure to find admirers. *Amiral Avellan*, a profuse flowerer, was excellent as ever; one of the best yellows. *Lady Byron* (1896), we should class among the best snow white varieties, of regular build, an incurved Japanese; *Lord Justice Lopes* (1897) is an incurved Japanese of the palest shade of lilac. The making of fine flower was noted in *Mrs. A. F. Beavan*, an incurved Japanese of a lilac tint generally, and possessing a white central floret having a flattish contour; it is new. *King of Bucks* (Owen, 1897) is a fine rich brown flower; the Australian, *C. B. Haywood*, a fine bold looking white flower with wide florets, was in very good form. *Mrs. T. Blake* is another fine flower, weighty, and of excellent form; it is said to come best from the first crown-bud. *Emily Silabury*, a reflexed Japanese,

white of an opaque sort, was admirable. As novelty of R. Owen's raising is *Duke of Wellin*, a flower of reddish-orange tint, having broad, inc florets, has the making, as the foreman told us, a fine large flower, and we are quite satisfied with the verdict. The last true novelty of 1897 thus mentioned is *Oceana*, of Australian origin, a plant which was producing some good flowers of a yellow colour.

Of known varieties noted may be named *M. C. de Leché*, a fawn and yellow-coloured Japanese outer florets showing rose-pink, and having yellow edges; *Charles Davis*, from an early bud, yellow in bud and from the late bud bronzy-fawn; *Mrs. Harn Kloss*, a chestnut-brown flattish flower, of Davis's raising; *Souvenir de petite Aimé* and *Mutual Friend* (American, of 1895), the latter a fine, large, white-flowered variety, with florets that turn inwards at the tips.

Good flowers were remarked of *Madame Carnot*, *White Carnot*, the latter a late flowerer, and late being those selected. Some nice blooms of *Seward* were visible; this fine brown-colored variety shows a great aptitude for damping at Chelsea. *Mr. D. Ward*, a hairy flower of brownish-bronze, appeared on some of the plants in capital form, of remarkable fullness.

The large span-roofed house, in which in former years the bulk of the collection used to be housed is now given up to bush-plants carrying numerous small flowers, which are not so liable to be injured by damp as were the specimen blooms. We remarked good examples of well-furnished bush *John Swinton*, *Vivian Morel*, *Chas. Davis*, *Souvenir de Petite Amie*, *W. Tricker*, *W. Seward*, *Etoile de Lyon*, *W. H. Lincoln*, *Hamlet*, and *Coquette de Castille*. In the *Camellia* house we found equally good bushes, far superior to anything of the kind found here in previous years; and amongst the best of these were *M. W. Holmes*, *Lady Selborne*, *M. Douglas*, *Cloth of Gold*, *Mandarin*, *Mdlle. B. P.* and *Source d'Or*. These bushes naturally grow of great decorative value, affording a succession of medium-sized flowers, extending over several weeks and being well clothed with leaves down to the base, or nearly, are excellent for room decoration.

BASSET DOWN HOUSE.

THIS Wiltshire residence and manor owes its name to a family of the name of Basset, who owned a large part of the county in the thirteenth century. In the year 1657 Basset Down formed part and parcel of the demesnes of Studley Grange (which at that date was subdivided into four portions), and which prior to the dissolution of the monasteries, belonged to the Cistercian Abbey of Stanley, near Chippenham. It was consequently tithe free, as all land belonging to the Cistercians was; and it is tithe free to this day, paying a *modus* instead of tithe to the Rector of Lydiard Tregoze. The present property came by inheritance into the possession of Dr. Nevil Maskelyne, Astronomer Royal, at the end of the eighteenth century, and afterwards to his only child, Mr. St. John Maskelyne. The present proprietor is N. Story Maskelyne. For many years Mr. Story occupied himself in beautifying the place, and in moving earth from the south side of the house, so as to let in the sun and carrying to the north side in order to raise the level. For this purpose he employed gangs of men, who, at that date (from 1820 onwards) were sadly in need of work during the winter seasons, the Basset family furnishing him with men who otherwise would have been on the rates, and the pleasure glades and grass-walks on the hill were gradually dug out during many successive winters, the labour going to farming and other work when the men returned. But it remained to the present owner to continue and finish what his father had begun, bring it into a harmonious whole. He it was who formed the rockery near the mansion, and the interesting wall made of sarsen stones collected from the adjacent Downs. Some of the shrubs planted by Mr. Story have become of great size. *Thuyas* of the variety *var. plicata*, forms a fine specimen at the side of the house, and there are fine old specimens

uya orientalis, and of Juniperus virginiana here. plicata (Lobbi) and Cupressus Lawsoniana, about the year 1880, and of which several fine trees were noted, show how well the chalky marl district suits them. Some fine examples of nris var. aurea standing on the rockery and in the border, appeared as if bathed in gold at the

is Brinkworth, and by the aid of the telescope the observer on a clear day may obtain glimpses of the Welsh mountains and the Badminton Monument. Blunsden Abbey is another conspicuous object, and the tower of Cricklade Church is seen in the far distance, with Purton visible between the trees. Worthy of note is an avenue about 200 or 300 yards long, consisting

Land. The specimens of Sequoia gigantea planted on a slope do not look happy, the land being doubtless too dry for them. The Scots Fir does well in this exposed situation, and all over the place the common Box grows to a large size. Some old Cedars of Lebanon—reputed to be 300 years old—are of majestic appearance, and very fine aged Walnut trees were met with.

In 1814, £100 was offered and refused by Mrs. Maskelyne, widow of the Astronomer, for three trees, as during the time of the war Walnut timber was of great value as stocks for muskets.

In old maps of the property, an avenue of Walnuts is shown in the "Cowleaze," leading up to the house, which were cut and sold by the widow of Edmund Maskelyne, Esq.

The Mrs. Maskelyne of the present day is an admirer of all sorts of hardy flowers, which she has planted extensively in the garden, which in the summer months must provide many pleasant floral surprises for the visitor. The old and beautiful single Roses are much cherished here. The rockery, too, in its season, presents an effective feature, for it is plentifully planted with bulbs of all kinds.

A part of Basset House dates from very old days, but the north and north-east side are comparatively modern, being erected in Queen Anne's reign, or somewhat earlier, as the date 1658 occurs on an iron fire-back, whilst the south side was rebuilt in 1882.

The usual appurtenances of a country residence are seen—namely, a kitchen garden, an orchard, &c.; but excepting that these, like the rest of the grounds, show careful management on the part of Mr. Bezzant, the gardener, there was little more of general interest to chronicle. J. B.

CYRTANTHUS SPIRALIS.

ALTHOUGH described and figured as long ago as 1816 in the *Botanical Register* (t. 167), this remarkable species does not yet appear to have made much advance towards popularity. At the period referred to, it was considered to be "an extremely rare plant," and after more than eighty years, the same remark still holds good. The most peculiar feature about the plant is undoubtedly the foliage, which is of a glaucous hue and spirally twisted, the latter fact being appropriately indicated by the specific name. The flowers are scarlet, and, as may be seen from the sketch (fig. 89), are by no means small. Indeed, they are considerably larger than those figured in the *Bot. Reg.*, but this is no doubt owing to the cultural skill of Mr. F. W. Moore, of the Royal Botanic Gardens, Glasnevin, who exhibited a specimen on September 9, 1896, at the Royal Horticultural Society's meeting at Westminster. The plant is a native of Cape Colony, where it usually flowers about November. John Weathers, London.

HORTICULTURE IN MYSORE.

THE famous Lal Bagh at Bangalore has long been known as one of the finest in India, and is under the superintendence of that talented horticulturist, Mr. John Cameron, who has been there for more than a quarter of a century, and it is due to his fostering care that these beautiful gardens have reached their present state. Mr. Cameron has issued an interesting report for the past year, from which we reproduce a few extracts on another page. It will be noticed that Vine-culture is carried on at Bangalore and Seringapatam most successfully. The famous Muscat of Alexandria, which is held to be one of the finest Grapes in cultivation in Europe, is successfully grown in Bangalore. Indeed, table Grapes of excellent quality, such as the Black Hamburg, White Frontignac, and the well-known Hubshee, or Black Grape of Aurangabad, have been grown at Bangalore for years, and it was, says Mr. Cameron, partly due to this fact that the Mysore State wished to extend the operations of viticulture generally in the Maharajah's dominions.

The experiments with fodder-grass in the discovery of a new ornamental plant have been identified as *Thysanotus*.



FIG. 89.—CYRTANTHUS SPIRALIS: FLOWERS SCARLET.

my visit last October. In the border near the purple Clary (*Salvia Solarea*) was a conspicuous object in flower, as was the dark purple *Aubrieta græca*.

The house and grounds occupy a site on the side of a hill, and terraces, and avenues, and serpentine paths surround it, with a very pleasing effect.

At a height of about 200 feet above sea level, the grounds are over an extensive valley; to the left

of Limes and Mountain Ash planted about fourteen years ago, with an undergrowth of old English Yews, the whole being most luxuriant in growth. Basset is a wonderful place for Beech and Elm, and fine specimens are common. The Oaks are but few, and these were of stunted proportions, showing that the soil is not to their taste.

A fine specimen of a Thorn, some 10 feet high, is interesting as having been brought from the Holy

perennial grass, and grows luxuriantly in the moist districts of the Malnad; and would, Mr. Cameron thinks, afford a large out-turn of forage. It is indigenous to the sub-tropical Himalayas, where it attains a height varying from 4 to 12 feet. Cattle, he tells us, are very fond of the whole herbage, and the culms remain green throughout the year. Mr. Cameron is also experimenting with some new trees, among them a new species of *Zizyphus jujuba* from Mauritius, which should prove an acquisition, if it can be acclimatised. *Indian Gardening.*

COLONIAL NOTES.

JAMAICA.

"THE Botanical Department of the island of Jamaica is fully described by Dr. Morris. It has done excellent service in the development of various industries, and has no doubt helped the sugar industry, also by attention to the best methods of cultivation, and by endeavouring to improve the canes. It has also imparted knowledge of cultivation to the peasantry. These efforts should be continued, and there seems no reason to alter the constitution of the department or its relation to the local government, but a competent agricultural chemist is required to be constantly employed in conjunction with the botanical department in analysing the soil and its products.

"For more than 100 years valuable economic plants have been systematically introduced and distributed through every part of the island. For this purpose, and for affording information regarding their cultivation, the island has maintained a Department of Gardens and Plantations under capable and experienced men, who have carried on experiments, and, while supporting the old, have encouraged the starting of many new and promising industries. The average expenditure for industrial purposes on the Jamaica gardens, which are established at various elevations from sea-level up to 5000 feet, during the last thirty years has not been less than £5000 per annum. Further, the Government has fortunately been administered during that period by progressive and able Governors, who have consistently adopted a policy whereby it was possible to extend railways (185 miles), establish telegraph lines (685 miles), improve communication by main roads (1879 miles), and provincial roads (3600 miles), practically reaching every part of the island. A weekly steam communication has been maintained round the island, completing the circuit in 120 hours; while the steam communication with Europe and the United States, especially the latter, is of the most frequent character, and, with one exception, carried on without the payment of subsidies.

"The capacity for further development is undeniable, for only about one-fourth of the cultivable area is actually under crops. If, as is possible under suitable circumstances, the value of either the sugar crops or the fruit trade was doubled, Jamaica would then be in as prosperous a condition as regards the money-value of its exports as it ever was in the days of slavery. But as regards the general comfort of the inhabitants, their social condition, and civic efficiency, Jamaica was possibly never better situated than at present.

"Practical demonstrations and lectures are regularly delivered in certain districts by the officers of the Botanical Department. These include such important points as the cultivation and preparation for market of Coffee, Cacao, Oranges, Kola, and Grapes; the methods of dealing with various kinds of soils by digging, draining, liming, and manuring. It is stated that, although these demonstrations are chiefly intended for small settlers, it is gratifying to find that they are attended also by owners of estates. The Botanical Department issues a monthly *Bulletin* dealing with agricultural and horticultural subjects of local interest, and gives hints with regard to the treatment of insect and fungoid diseases of plants, and the cultivation and curing of all a 'ricultura'.

products likely to be suited to the island. Further, an industrial school is attached to the Hope Gardens, where the boys attend school for two hours daily, and at other times receive practical instruction from the superintendent in pruning and budding, and in the details of the routine work of the garden. Much good is likely to arise from this practical teaching, and especially if arrangements are made to retain the boys who show special aptitude as apprentices in the gardens, after they have attained the age at which they must leave the school. Apprentices from Lagos were lately trained at Jamaica for service on the West Coast of Africa. These are now engaged in agricultural work in their own country." *Report of the West Indies Commission.*

BRITISH GUIANA.

"The gardens at Georgetown, it may be mentioned, are amongst the most attractive and beautiful of any in the tropics. The Superintendent has contributed valuable information respecting the resources of the colony, and he has distributed numerous plants for experimental cultivation amongst all classes of the community. He has also taken an active part in the agricultural experiments carried on in conjunction with Professor Harrison to improve the sugar-yielding properties of the cane, and the application of suitable manures. The most promising canes are distributed from time to time amongst planters, and the appreciation of the work done in this direction was prominently brought under the notice of the Commission.

"The following table indicates the number and value of the plants sold from the Botanic Gardens during the last fourteen years:—

Year.	Plants.	Value.
		Dols.
1883	11,285	824.28
1884	12,360	1,431.31
1885	10,831	1,632.07
1886	No register of numbers	1,160.10
1887	7,778	743.29
	11 Warden cases, and 13 tons Sugar-cane	
1888	6,518	718.17
1889	6,196	665.08
1890	7,258	1,423.29
1891—2	5,685	964.42
1892—3	6,962	1,436.03
1893—4	4,608	1,093.19
1894—5	5,424	975.59
1895—6	6,222	699.88
1896—7, Jan. ...	19,765 and 23 loads and 4 barrels Sugar-canes	600.42
	110,892	14,427.12

"The large quantities of seeds, seedlings, and cuttings disposed of every year are not included in the above.

"When the interior lands are in course of being settled, it will be found desirable to establish branch-gardens in certain districts for the purpose of supplying seeds and plants to those starting new industries, and to furnish them with selected fruit-trees, such as grafted Oranges, Grape-fruit, Mangoes, &c. These would not be obtainable by any other means. The men in charge of such branch establishments should be competent to advise as to the selection and treatment of soils, and to afford hints in regard to the requirements of new or little-known plants. Later on, one or two agricultural instructors might be added to the staff, and these would devote themselves, as in Jamaica, to the work of visiting and instructing settlers, and giving practical demonstrations in grafting and pruning Orange and other fruit-trees, Coffee and Cacao, and in simple and inexpensive methods of preparing crops for market. The progress made under the stimulating influence of such agencies would soon repay the cost. There is ample evidence of this in the rapid development of new industries which has taken place in other countries." *Report of the West Indies Commission.*

THE ROSARY.

ROSES OF BRITISH ORIGIN.

THIS subject is already a comprehensive one, it is extending every year. We no longer depend upon France for our hybrid perpetuals, by Chinas, and Teas, for the Roses we derive from British rosarians are quite equal to any of the essential creations or "introductions." Amongst latter, for example, it would be impossible to cover finer productions, in their own special class than Mrs. Sharman Crawford or Mrs. John La Duke of Edinburgh, Prince Arthur, or Duke Albany; Muriel Grahame, Devonensis, or Sou de S. A. Prince. Neither France nor Germany given us a grander Rose for garden-decoration. Viscountess Folkestone, though doubtless Kaiserin Augusta Victoria (which has not its fragrance or same marvellous facility in flowering) is more perfect in formation. But, on the other hand, if its form is superior, and its petals more closely compact, it is more exacting in its demands. It absolutely requires, according to my experience, a dry, warm season for the revelation of its floral capability, and this, at least in our somewhat trying Scotch climate, where moisture is superabundant, and supply of sunlight often extremely limited, is a serious limitation. But where atmospheric influences smile upon its development from bud to perfect expanded blossom, Kaiserin Augusta Victoria is a glorious flower, of noble dimensions, and tender Primrose-hue.

WALTHAM ROSES.

Roses of British origin cannot adequately be discussed without some appreciative reference to the which have been originated at Waltham Cross. It is interesting to remember that all of the varieties whose names are inseparably and most honourably associated with that of the veteran rosarian, William Paul, have been given to the world during Victoria's reign. One of them, whose great merit have often emphasised, bears the name of the late Duke of Albany, who may be said to have inherited from both of his illustrious parents his love of horticulture. Duke of Edinburgh, which has yet been entirely superseded, was raised at Cheshunt when Mr. William Paul and his elder brother the late Mr. George Paul, were equal partners in the firm bearing their name. Of Waltham Cross Roses, the most famous are probably the following varieties, viz. Beauty of Waltham, sent out in 1859 and still much admired for its shape and brilliant complexion; Crown Prince, a beautiful and very fragrant dark hybrid perpetual, which has always been a favourite with the French rosarians; Duchess of Albany, a valuable, deeper shaded derivation from France; Duke of Albany, already characterised; Gordon, a clear-complexioned modification, in probability, of Madame Victor Verdier; Gr Mogul, which has the formation of A. K. Waltham, though not so reliable; Marchioness of Lorne, most accommodating, and richly odorous Rose, which in a very cold eastern exposure, succeeds admirably here; Pride of Waltham, Star of Waltham, W Lady, and Medea, the finest of British yellow of greater substance than Madame Hoste, and more impressive in form than Perle des Jardins. Duke of Bedford and Countess of Rosebery, though introduced by Mr. Paul, were not raised by him. At his later achievements are Sylph and Sappho, Queen Mab, and Duke of York, Enchantress, and Empress Alexandra of Russia, whereby his reputation fully sustained.

CHESHUNT ROSES.

The Roses raised at Cheshunt have also been numerous, and it may truly be affirmed that the majority of these have proved of the greatest value either for effective exhibition or garden cultivation. It would be almost superfluous to speak of the merits of such varieties as Mrs. Paul, the grand the Bourbons, surpassing even the venerable Sou de la Malmaison in general effect; while Mrs. Paul is supposed to be derived from Madame Isaac Paul is a notable example of the law of variation.

of Teck and Cheahunt Scarlet, both brilliant acquisitions, though not, perhaps, so impressive as their predecessor, Duke of Edinburgh; Charles Gater (whose name is commemorative of Mr. George Paul's foreman), a hybrid perpetual of loveliest velvety hue; Glory of Cheahunt, and Duke of Connaught; Carmine Pillar, a splendidly decorative climbing Rose; and Reynolds Hole, described to me in a letter by the Dean of Rochester as "uncertain, coy, and hard to please, but exquisitely lovely when in good humour."

BENNETT'S ROSES.

Of the late Mr. Henry Bennett's creations, the most important are Mrs. John Laing, H.P., and Viscountess

tively by Mr. J. Cranston of Hereford, and the Messrs. Turner of Slough, of whom the latter have been the introducers of the Japanese Crimson Rambler, whose success has been extraordinary. Mr. Benjamin R. Cant has given us Prince Arthur, a great improvement on General Jacqueminot. To Lord Penzance we are indebted for his beautiful and fragrant Hybrid Briars, of which the most precious are Lady Penzance, Brenda, Flora Molvor, Meg Merrilies, and Jeannie Deans; while from the Messrs. Cooling, and Mr. Alexander Hill Gray, of Bath, we have received Lawrence Allen, and that graceful, miniature form of William Allen Richardson, Allister Stella Gray, which I find more fascinating than its parent Noisette.

easily burned, while the latter equally demands a warm climate, as it is difficult of expansion by reason of the number and close compactness of its petals. Miss Ethel Brownlow and Mrs. James Wilson, two admirable and highly contrasted Teas, the latter having the habit of Catherine Mermet. Helen Keller, of beautiful roseate hue, and Mrs. W. J. Grant, of which the latter is very fascinating when the flowers are half blown, a lack of fulness being manifest when their entire dimensions have been attained. Muriel Grahame, introduced but not originated by the Irish rosarians, which has been derived from Catherine Mermet, and bears a very conspicuous resemblance to The Bride. Marjorie, though not of strong growth or very prolific, is one of the sweetest of modern hybrid Teas. Marchioness of Londonderry is, by reason of its ivory white colour and commanding dimensions, a most impressive Rose; it is extremely susceptible to the influence of rain. The Marchioness, for this special reason, is not so well adapted as her beautiful sister, Margaret Dickson, for garden ornamentation, and therefore is essentially an "exhibition Rose." David R. Williamson.

VITIS COIGNETIÆ (?).

OUR illustration (fig. 90) shows a leaf and tendril of a fine species of *Vitis*, useful chiefly as a decorative plant in this country, so far as we yet have any experience. The leaf and tendril are figured from a plant shown by Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, at a meeting of the Royal Horticultural Society on October 12 last. The plants were growing in pots, and they possessed ripening foliage of fair size, and of a ruby colour.

The plant has hitherto been regarded as difficult of propagation; but from the following note, taken from Möller's *Deutsche Gärtner Zeitung*, we learn that the Vine is quite hardy in Germany; planters in this country need have no doubts of its hardiness. If that be the case, it is a much hardier plant than any variety of *Vitis vinifera*, which the frosts of an ordinary German winter kills to the ground, and sometimes to the depth of 6 inches or a foot in the absence of a heavy coating of snow, or a thick mulch of tree-leaves, Fern, &c. In our country, it would be a winter of remarkable severity that would injure unprotected shoots, if these were well ripened. The plant has always presented difficulties to the propagator; but according to Mr. Rettig of the Jena Botanic Gardens, eyes of ripe wood taken early in the new year and split in half, and placed in pans filled with loam covered with sand, and plunged in a hot-bed of 80°, strike without the least trouble.

It should be stated that the Vine shown by Messrs. Veitch under this name is not the same as that grown by Mr. Anthony Waterer, nor is it the same as that originally introduced from Japan by Madame Coignet; the leaves of which latter are more leathery, and thickly covered with fawn-coloured down on the under surface.

AUTUMN FLOWERS AT BELVOIR.

POLYGONUM VACCINIFOLIUM.—We have in this Himalayan plant one of the prettiest imaginable things for autumn flowering. It is good for planting on the rockery and stony banks. Although introduced in 1845, the plant is still far from common in gardens. I had almost called it the prettiest member of the Polygonum family, but others might disagree with this opinion concerning a group of plants which differ so much from each other as Polygonums do. One has only to contrast the little wiry *P. aviculare* of our fields and roadsides with the stately and graceful *P. cuspidatum*, in order to realise the great difference there is in stature and general appearance of the various species. *P. vaccinifolium* is a dwarf species, having thin, wiry stems which creep over the rocks, and hang gracefully over ledges; and the plant is now—October 20—covered with small 3-inch spikes, bearing flowers of a bright pink colour. It is a "good doer," and has the additional merit of not straying far from the spot where it is planted, and not over-running its boundaries like *P. cuspidatum*.

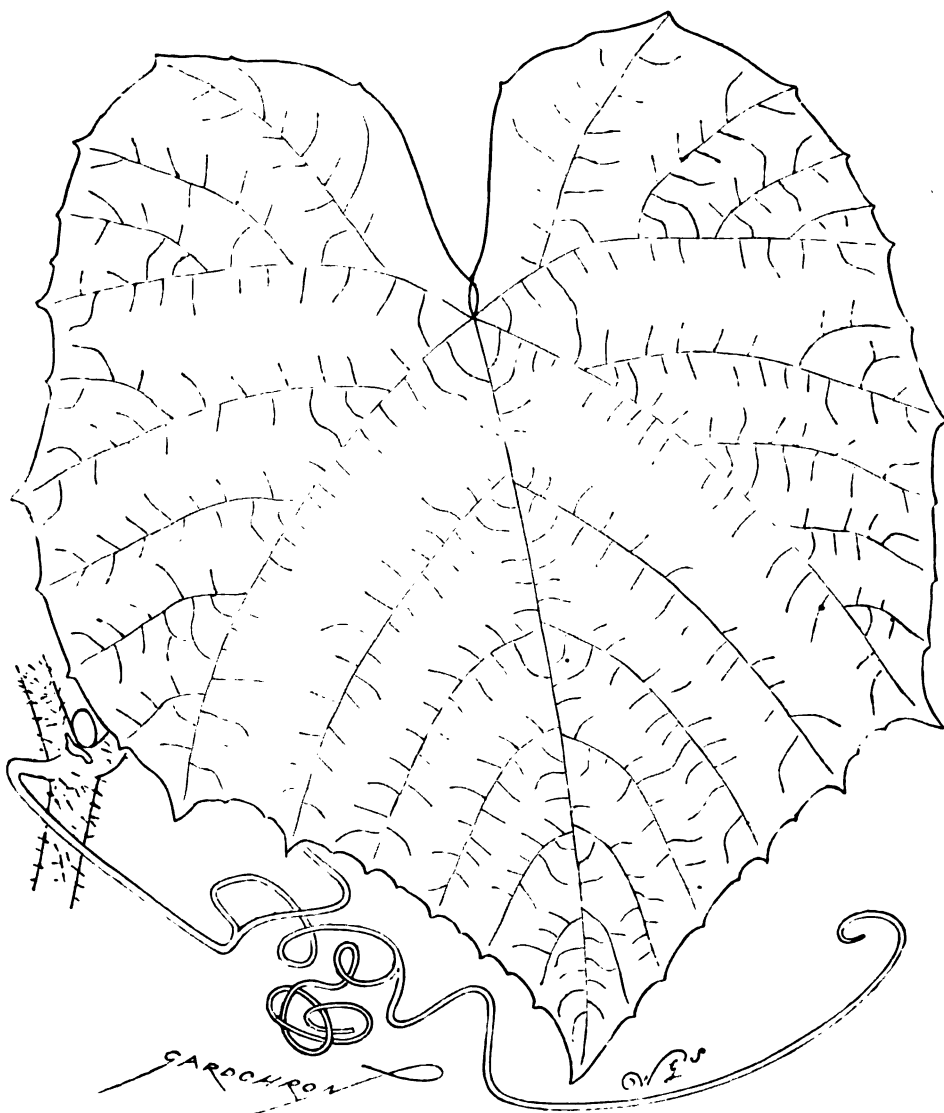


FIG. 90.—*VITIS COIGNETIÆ*, (?) HORT. VEITCH; SMALL LEAF DEEP ROSE-COLOURED ABOVE, GLABROUS BENEATH.

Folkestone, H.T., to which, as invaluable varieties for garden culture (the former being also indispensable for exhibition), I have already referred; Princess of Wales and Princess Beatrice, very beautiful Tea Roses, but difficult to grow adequately, and very sparing of their blooms; Heinrich Schultheiss, the parent of Mrs. Harkness, obtained by the eminent firm bearing that name; Captain Hayward, a crimson H.P., of great effectiveness in the garden, but not very full; and Clara Watson, which for many years I have regarded as the grandest of the hybrid Teas—this year I had it nearly 6 inches in diameter.

ROSES OF VARIOUS ORIGIN.

Among other notable Roses of English origin are the Crimson Bedder and Mrs. Harry Turner, raised respec-

tively by Mr. J. Cranston of Hereford, and the Messrs. Turner of Slough, of whom the latter have been the introducers of the Japanese Crimson Rambler, whose success has been extraordinary. Mr. Benjamin R. Cant has given us Prince Arthur, a great improvement on General Jacqueminot. To Lord Penzance we are indebted for his beautiful and fragrant Hybrid Briars, of which the most precious are Lady Penzance, Brenda, Flora Molvor, Meg Merrilies, and Jeannie Deans; while from the Messrs. Cooling, and Mr. Alexander Hill Gray, of Bath, we have received Lawrence Allen, and that graceful, miniature form of William Allen Richardson, Allister Stella Gray, which I find more fascinating than its parent Noisette.

IRISH ROSES.

Many Roses of distinction have come to us from the Royal Nurseries of Messrs. Alexander Dickson & Sons, at Newtownards. Of these, the most attractive are Mrs. Sharman Crawford, an exquisite pink Rose of upright habit, fine form, and great floriferousness. Earl and Marchioness of Dufferin, of which the former requires a cool season, as its petals are

CRINUM POWELLII.

This bulbous plant affords a welcome variety in the herbaceous border, both in regard to the foliage and the flowers, and will be grown extensively when it is better known. Its flowers, which are fragrant, are freely produced in September and October in this garden on stems 3 feet in height, with ten to fifteen flowers in each corymb, and they are of a deep pink colour outside, and pale pink within, appearing at some distance like a cluster of large pink Lilies, opening in succession for several weeks. The plant is undoubtedly hardy, it having withstood the severe frosts of 1895 without serious injury; but as a precaution, the ground around, and the bulb itself, should be covered early in November with a heap of half-decayed leaves, when, if the frosts are severe, the plant dies down only so far as the covering. Our plants are growing in a light mixture of leaf-soil, sand, &c., overlying a strong deep clay. Will any of the readers of this kindly afford me the history of this plant? [A cross between *C. longifolium* and *C. Moorei*. Ed.]

PHYSOSTEGIA VIRGINIANA SPECIOSA.

Dracocephalum of some gardens. A native of North America, this plant grows to a height of 4 to 6 feet, and is very distinct from the other occupants of the herbaceous border; the stems are furnished with numerous spikelets of flowers, which are in colour lilac and white. It lasts in flower for several weeks; and if it cannot be regarded as a showy plant, it is pretty, and its general effectiveness is enhanced by the crimson-purple colour of its stems.

PHYSALIS ALKEKENGI.

We find this plant affords a welcome bit of bright colour at this season, which continues until severe frost cuts down the plant. It is a plant of easy culture, reappearing regularly every spring when once planted and left undisturbed. The patch should have a light top-dressing annually in the spring, and some amount of thinning of the plants performed a little later. For indoor decoration, this species, and the variety *Franchetti* with bigger calyces, make capital subjects, and keep in good condition for a long time without water. *P. Franchetti* has not been a success hitherto at Belvoir, for although the plant grows freely, it does not ripen its fruit out-of-doors. Whether it requires more heat in summer than the old variety is uncertain, but it appears to be quite as hardy, and is worthy of extra care and attention in order to secure its fine large fruits. *W. H. Divers, Belvoir Castle Gardens, Grantham.* [In the more southerly shires, *P. Franchetti* ripens its fruits perfectly in fully exposed spots in the open, and even when the plants are crowded together they flower abundantly, and set well. Ed.]

GRAPE VINES AT NORWOOD, ALLOA.

THE residence of Thomson Paton, Esq., is well known for the public-spirited munificence of its proprietor in all that concerns the interests of the town and neighbourhood, such as the establishment of public libraries, reading-room, baths, technical institutes, &c., and the fame of its Grapo-growing, general fruit and flower culture, and landscape furnishing under the able management of Mr. Kirk, Mr. Paton's gardener. Having seen and heard so much of his Grapes, the writer was naturally eager to see them at home for himself. Hence he soon found himself passing through the pleasure-grounds which cover some 20 acres, en route for the kitchen garden of about 1 acre, well stocked with fruit-trees and vegetables, and containing the famous vineries, two orchard-houses, two Melon-houses, Pine, Peach, and Nectarine-houses, &c. There are four vineries, each 24 feet long by 14 feet wide. These were planted in 1888. Each vinery is planted with seven Vines. The early vinery was furnished with three Black Hamburgs, two Madresfield Court, one Buckland Sweetwater, and one Foster's Seedling. The Grapes here were all cut except Foster's Seedling,

which were fine in bunch and berry. The leaves and such young wood in the early house were all that the most sanguine could desire.

The second vinery is mostly devoted to so-called varieties of Muscats, among which were Bowood and Tynningham Muscats, Muscat of Alexandria, Muscat Hamburg, and one rod of Mrs. Pearson; the major part of the crop here was already cut, but those that remained sufficed to show the splendid character of the Grapes and the size of bunch, and especially of berry.

In the third vinery were fine examples of wood, leaf, bunch and berries. It was also filled with a most suggestive and interesting variety of sorts. There were three Gros Colman, one black Hamburg, one Golden Hamburg, one Madresfield Court and one Trebbiano. It is interesting to note that white and black Grapes are here interworked on each other with the best results, without changing their colour, or greatly modifying their character.

The new Grape Lady Hutt grafted on Colman was finishing four bunches over 6 lb. in weight; while Appley Towers also on Colman were carrying bunches 5 lb. in weight and as black as sloes. The Duke of Buccleuch grafted on Trebbiano, was carrying fine bunches over 5 lb. in weight; Mrs. Pearson grafted on Colman was also very fine here; while Black Hamburgs in this vinery were models in bunch, berry, colour, and quality.

The fourth vinery is planted with two Lady Downes, one Alnwick Seedling, one Alicante, one Gros Guillaume, one Gros Maroc, and one Cooper's Black, the last two being considered synonymous. In density of bloom, form, and quality they are equal. In this house is also to be seen a very promising amber-coloured Grape, Kirk's Seedling Duke, grafted on Lady Downes; likewise a black Duke. Madresfield Court is a superb Grape in bunch and berry, grafted on Lady Downes. Muscats, Hamburgs, with fine bunches, and abnormally large berries, grafted on Alicante; Appley Towers and Black Hamburg are also grafted on Alnwick Seedling, and are superb in size and quality; and the Duke of Buccleuch is at its best, and a grand best it is, on Gros Guillaume.

Two points strike visitors to the Norwood vineries. Mr. Kirk, their skilful manager, is a fervent believer in the mixture of Vine-blood. Nothing can be too good or fresh in scion or stock with which to reach perfection in bunch, berry, colour, quality, size of leaf, strength, and hardiness of wood. The second point is, that all his blends, crossings, and mixing of Vine-blood seem eminently, and to the mere visitor, all successful; but doubtless, to Mr. Kirk each cross has its own special message and meaning, some of which he will probably find time to reveal to his brother growers at an early date.

Meanwhile, the general lesson that seems to lie on the surface of all these crosses, appears to be this:—The more we cross our vines, the bigger and better our Grapes; though some affirm that skill and care, rather than grafting and crossing, are the parents of the victories reaped in vine-culture at Norwood, and doubtless these are main factors of success here as everywhere over the wide field of horticulture. Others, again, affirm Kirk's manure does it all. Having learned the wants of his vines in the school of long experience, and assisted by his son, a chemist in London, who more likely to make a perfect food for his favourite vines or other plants? Hence, Kirk's Vine-food or manure has proved itself a well-balanced and powerful fertiliser, rich in organic matter, ammonia, potash, and phosphates. But the fruits of these Vines, their vigour, their produce, and the prizes they take, are the results of skilful culture, crossing, and feeding combined. Near the vineries are some nice Pine-stoves, a house of fine Tomatos (the Comet), another of a good Brown Turkey Fig, Cucumbers, and two houses of Orchids, one mostly *Odontoglossums*, and the other *Cattleyas*, *Dendrobiums*, &c.

Passing from the higher to the lower gardens through the well-furnished flower-gardens, borders, and shrubberies, we come to the lower range of glass near the mansion. Here is an early Peach-house 24 feet long and 14 feet wide, furnished with fine

trees of Waterloo and Royal George Peaches, and the back wall with Lord Napier Nectarine, in robust health, and that carry fair crops every year.

The late Peach-house is 30 feet long by 26 feet wide, the extra width furnishing space for utilising to the full the front roof trellis and the entire back wall of the house without injury or excess of undue shade to either. The front trellis is furnished with fine Peach-trees of the Dymond, Barrington, and Sea Eagle Peaches, some choice fruit remaining at the time of my visit; the back wall being clothed with Humboldt and Pine-apple Nectarines.

Passing through a large greenhouse, well furnished with Azaleas and other useful hard-wooded plants, we enter a beautiful orchard-house, 30 feet by 24 feet, and sufficiently lofty to give it a specially light and elegant appearance, filled with Pears, Apples, Plums, and other fruits, grown in 11 and 12-inch pots. The plants were in perfect health, carrying from a dozen to fifteen and twenty good fruits apiece.

Passing through this attractive orchard-house, we enter the large conservatory attached to the mansion. It contains a huge *Dicksonia antarctica*, said to be the finest in Scotland, and many other choice specimens, and was glowing with Begonias, Cannas, and other showy flowers and plants. Near this is a well-stocked plant-stove, crowded with choice greenery, Palms, Ferns, variegated plants in 6-inch pots, such as *Pandanus*, *Crotons*, *Dracenas* for house, room, and table decoration.

But my time was exhausted, though by no means the charms and resources of this chastely-disposed and tastefully and profitably furnished demesne. But having gone to Norwood primarily to see the Grapes, and help others to see them so far as possible by proxy through your pages, and having seen them, to my great pleasure and profit, my present duty ends with heartily thanking Mr. Kirk for his great courtesy and kindness. *D. T. Fish, 12, Fettes Row, Edinburgh.*

FLORISTS' FLOWERS.

THE AURICULA IN AUTUMN.

A GENERAL consent on the part of growers asserts the fact that Auriculas in pots have on the whole done remarkably well this season. Somehow or the other, variable as was the weather, it appears to have suited the plant. My own plants are in full leafage, though a few of the basal leaves are turning yellow, showing that the time is coming when they will enter their rest period. All through the hot dry weather, the plants if looked after in the matter of water, remained clean and vigorous; but very little seed was obtained even from fertilised flowers; the dry hot atmosphere of even a north house in such weather appears to have dried up the pollen. A good growth followed upon the longest day, but few autumn trusses, so far have put in appearance, and there has been scarcely any boxes of plants. Some varieties deteriorate rapidly unless potted soon after blooming, and have every attention; but these have remained in good growth, and so I am justified in stating that the plants have done remarkably well on the whole.

He who would be successful as a cultivator of Auriculas must be prepared to give his plants proper attention at all seasons of the year. Just now, while the weather is fine and dry, water is needed; the pots are becoming filled with roots, and if the drainage be good, and it should always be so, water soon drains away. This is an essential condition of good health. Deficient drainage, and a water-logged soil, injure and destroy more plants than does anything else. Given clean pots, a suitable soil, healthy plants, perfect drainage, and fresh air, and the culture of the Auricula is by no means difficult. All that is desired is a round of necessary attention to keep the plants in the way they should go. It is the usual practice to keep the decaying leaves removed. I do it at this time of the year in the interest of order later on. When frost sets in, I allow the decaying leaves to remain on the surface of the pots all the winter. I may be wrong in doing

so, but they appear to me to be a kind of natural protection, and I have seen in the case of many hardy plants in the open how their decaying leaves afford them protection during the winter. Then in spring, as soon as there are signs of the beginning of the annual forward movement, the leaves removed, the surface soil stirred, and in some instances replaced with fresh, water given if necessary, and then they seem to sail ahead majestically along the sea of promise.

A treacherous grub, which appears to suddenly put in appearance, and which after nibbling at a few of the outer-leaves, makes for the heart of the plant and eats its way to the centre and devours it, needs sharp looking after; the months of September and October appear to be its chief feeding-times. No quarter to this grub should be the rule of the Auricula-grower. Green fly is active, just now particularly so. It is astonishing how this pest increases under any relaxation of energy in keeping the plants clear of it. A camel's-hair brush can be used to disturb the marauders, subjecting them to a forcible ejection; if they make headway, a fumigation with the XL vapour, which I have always found an excellent insecticide, or by means of tobacco-paper or rag, should then be applied.

As the plants fall away to their winter's rest, water may be gradually withheld; but I am by no means in favour of keeping the soil about the roots

land's gardens at Syon House, where a succession of gardeners have been fortunate in securing pods in quantity, and also at Osberton in Mr. Bennett's time. Mr. Bennett laid stress on getting the wood well ripened, and to ensure that, he almost parched the plant. The failure to fruit is due in most instances to a lack of knowledge of the method of fertilising the stigma. In the flowers of the Vanilla, besides the petals and sepals, there is a column to which the anther and stigma are attached at the summit (see fig. 91). The anther is a dilated organ attached to the summit by a curved process, and contains the pollen-masses within a cavity on its lower surface. The anther by means of its curved neck, is directed downwards, and rests upon the so-called rostellum, which lies between the anther and the stigmatic surface, and thus prevents all contact between them. To effect fertilisation, the rostellum has to be removed by means of a pair of pointed forceps, which must be introduced sideways between the anther and stigmatic surface, so

Forget-me-Not, the plants forming little tufts, as in *Spergula pilifera*, from whence springs up an abundance of delicate sky-blue flowers. It comes true from seed, blooms uninterruptedly from May until frost, and is admirably adapted both for borders and for pot-culture. (See fig. 93.)

MESSRS. HAAGE & SCHMIDT, ERFURT, OFFER—

Campanula mirabilis (Alboff).—The most beautiful of all Bell flowers, discovered by Mr. Alboff in the Caucasus. Horticulture has to thank Mr. William Barbey's generosity for the introduction of this magnificent plant. It belongs to the section of *C. medium*, but has little resemblance to any of the *Campanulas* cultivated up to the present day. Being densely branched from the bottom, it forms a low pyramidal bush of about 2 feet in diameter; each branch, even the smallest, produces a great number of large flowers of a pale blue or lilac colour. The plants, when in full bloom, present a regular flowering pyramid of at least a hundred blossoms open at the time. The singular leaves are hard and leathery, garnished with thin and sharp teeth at their edges. The radical leaves, forming a rosette, differ greatly in shape of those appearing on the stems; the former are oval-spatulate, the lower ones of the latter are stemless, oval-oblong, the upper ones round-heart-shaped.

Delphinium speciosum var. *glabratum* (Stapf).—Handsome new hardy perennials Larkspur from the

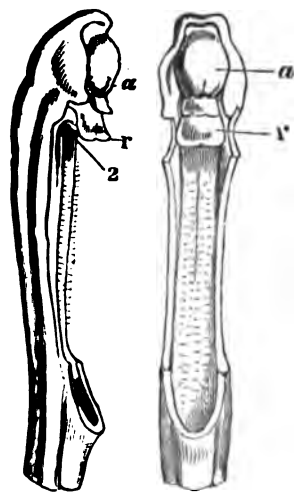


FIG. 91.—FERTILISATION OF VANILLA PLANIFOLIA.

a, Anther; b, Rostellum; 2, Stigma.



FIG. 92.—ANGELONIA GRANDIFLORA ALBA.



FIG. 93.—MYOSOTIS PALUSTRIS TOM THUMB.

so dry as some people advocate. I do not think anyone ever lost an Auricula through the moist soil in the pot becoming frozen during the time it was severe; but I have had the fine root-fibres destroyed by keeping the soil too dry. Only let there be a porous soil and free drainage, and there will then be very few indeed of pots with waterlogged soil.

It is not too late to re-pot young stock, provided that the balls of soil are not too much reduced in making the shift. Such seedlings as need pricking-off from seed-pans should be transplanted without delay, so as to enable them to become active before Christmas. At this time of the year slight shifts should only be given, say, to a pot only one size larger. I am in favour of two pottings—the first as soon as possible after blooming, trimming the roots where necessary, and transferring the plants to a small-sized pot; and then early in September re-potting to a larger size in fresh soil, without disturbing the balls of roots. They have the autumn to make fresh roots, and by the spring are well established in the fresh soil. R. D.

as to pull it away in the direction of the former. The pollen-masses are then drawn out and pressed down on the latter, and the operation is completed. Doubtless many of our readers would be pleased to read Mr. Wythes' methods of cultivating the plant at Syon.

CONTINENTAL NOVELTIES.

MR. ERNST BENARY includes among his novelties the following, of which we condense the descriptions from his Catalogue:—

Angelonia grandiflora alba (Benary).—The *Angelonia grandiflora* is a graceful greenhouse-plant, of aromatic odour, and bearing lilac flowers, which appear the same season as the seed is sown. The first variety, which I have now obtained, is more beautiful than the type, its numerous pure white flowers standing out in contrast with the elegant dark-green lanceolate foliage. This plant is especially adapted for room or conservatory decoration, being a good winter bloomer, and it also makes a charming ornament for the table. (See fig. 92.)

Myosotis palustris Tom Thumb (Benary).—This is quite a pigmy form of the widely-known Marq

Himalaya mountains. The green leaves are radical, palmately-lobed, the lobes toothed and out; inflorescence corymbose, 2 feet in breadth by 3 feet in height, branches spreading; flowers silkily hairy, 1½ to 2 inches across, and of a beautiful dark azure-blue colour. Similar in growth of the plant, and also in the shape of the flowers, to the *Delphinium cashmerianum*, this new Larkspur differs essentially by its larger inflorescence, and by the more opened, star-like, and longer-spurred flowers.

Primula capitata (cashmeriana) alba.—New white-flowering variety of this earliest-blooming Primrose, reproducing itself true from seed. The flower-heads are much larger than those of *P. denticulata* alba.

Primula floribunda grandiflora Isabellina.—While the type of this extremely free-flowering Himalayan *Primula* produces flowers of a rich canary-yellow, our new well-fixed variety bears flowers of a soft and very pleasing pale sulphur, contrasting beautifully to the green foliage. If sown in a greenhouse in January or February, the seedlings will commence blooming in June, and will continue so without interruption during the summer and winter months. Splendid plant for the culture in rooms or in a cool-house.

Rudbeckia bicolor superba.—This new annual variety represents a welcome addition to the collection of these popular annual and perennial plants, so extensively used for cut flowers at present. Growing about 2 feet in height, it forms a many-branched, dense bush, and produces its long-stemmed flowers

THE FRUITING OF VANILLA PLANIFOLIA.

MANY gardeners grow, or at any rate they used to grow, this plant commonly in the stove, but it was rather rare to see a pod. Exceptions, however, should be made—that of the Duke of Northumber-

in the greatest abundance. The disc is brown, the ray-florets are yellow, with large velvety-brown spots at the base—a colouring which may be compared to that of *Obeliscaria pulcherrima*, or that of the dwarf French Marigold "*Legion of Honour*."

MR. F. C. HEINEMANN, ERFURT, CATALOGUES THE FOLLOWING—

Heinemann's New Emperor Salpiglossis.—It forms only one single leading stem, which often grows as thick as a finger, and bears on its end a bouquet of the most beautiful flowers. Every one of them is richly veined with gold, and considerably larger than those of the old "*grandiflora*" type. The throat is wide open and short. The edge of the flower is not so deeply incurved as with the old variety, which gives it a more round shape.

Sky blue, pillar shaped Forget-me-not.—A *Myosotis* striking by its very unique structure. All branches that form the plant grow perpendicularly. By this compact growth every plant forms a regular pillar or column. This habit makes the variety particularly useful as a pot plant for market sale, or as edging for flower-beds and any other decorative purpose. There are new varieties of *Gloxinia*, *Pansy*, crested *Begonia*, &c.

HORTICULTURAL EDUCATION.

WE have sought, says Professor BAILEY, in a recent *Bulletin*, not so much for new facts as for some way of driving home the old facts. We have tried to set forces at work which would silently extend themselves when we had left them. Fortunately, we have been greatly aided by the hard times and the multitudes of bugs and special difficulties. These things have driven people to thinking and to asking for information. The agricultural communities are thoroughly aroused, and now is the time to teach. When one is thoroughly prosperous in his business, there is little chance—as, in fact, there is generally little need—of teaching other methods. The efforts to reach the people, in the progress of our work, may be classified under five general heads. These efforts have all been experiments in methods of extension teaching as applied to horticulture. We have tried to ascertain the value of: (1.) The itinerant or local experiment as a means of teaching; (2.) The readable expository bulletin; (3.) The itinerant horticultural school; (4.) Elementary instruction in the rural school; (5.) Instruction by means of correspondence and reading courses. In the local experimental work, something over 100 different experiments have been planned and prosecuted in different parts of western New York. These comprise experiments in tilling the land, in pruning trees, in fertilising the soil, spraying, combating insects and fungi, and the like. The fundamental purpose in these experiments is to teach by means of object lessons and not to collect scientific facts, although the latter often come as a very valuable incidental result. The horticultural schools have been about forty in number. These are meetings which last two or more days, at which time certain instructors take up definite lines of instruction, giving by far the greater part of their attention to underlying principles and not to mere facts or methods. The fundamental difficulty with our agricultural condition is that there is no attempt to instruct the children in matters which will awaken an interest in country life. We have therefore conceived that the place in which to begin to correct the agricultural status is with the children and the rural schools. For the purpose of determining just how much could be expected from this source, many rural and village schools were visited during the past year, the instructors talking to the children about any object which presented itself at the time. The result was that all the instructors were impressed with the readiness with which the children assimilated the information, their keen desire for it and a notion of it, and the almost universal impression that teachers took in this kind of work. We are convinced that the greatest good has been rendered to the agricultural community by awakening an interest in nature-study in the teachers and children.

THE ONION CROP OF 1897.

THE Onion crop of 1897 in the United States is far short of a full one, and materially smaller than that of 1896, which in turn showed a considerable deficiency.

Exhaustive investigations recently made by our contemporary the *American Agriculturist*, in every important Onion growing section of that country showed the commercial crop of 1897 to be 2,300,000 bushels, compared with what may be called a full yield of 3,000,000 bushels, that figure being reached in some recent years. The crop now being secured and marketed, has turned out rather better than seemed possible a month and more ago, yet it is by no means a large one.

In some of the most important sections of the Onion belt, it is little more than half a yield, but this is partially offset elsewhere by increased acreage and good crops. The high prices last winter and early spring stimulated the acreage for the present crop.

The Onions secured excellent early growth as a rule, and progressed well until midsummer, when weather conditions turned unfavourable, checking development which was never fully recovered. This was notably the case in the Connecticut valley, in Orange county, and Central New York, and in parts of Ohio, the West being less disturbed, and yielding fairly well from the scattered acreage.

The acreage, finally harvested, does not differ much from that of 1893, in spite of the tendency last spring to increase the area under the Onion crop. A good many fields which originally had a fair start, later deteriorated so rapidly that growers abandoned them or put the land into other crops. As a result, the acreage finally harvested was considerably less than at one time seemed probable. As a whole, the rate of yield per acre was smaller than last year. Occasional sections where weather conditions were favourable, and extra care given the crop in the way of fertilisation, cultivation, &c., show a very good rate of yield; some areas give 500 to 600 bushels to the acre as lifted, yet when the Onions are weighed out this figure will be greatly reduced, bringing down the aggregate commercial crop considerably; the latest returns show that as a rule the Onions of 1897 possess excellent keeping qualities.

Comparing the opening of the season with that of last year, prices paid to growers in the country show thirty to fifty per cent. advance—this fact is nearly universal.

The undertone in the Onion market for choice grades is one of decided firmness. *J. J. Willis, Harpenden.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Clearing and Re-planting Flower-beds.—The summer bedders being now mostly flowerless should be cleared away, and more especially those in beds which have to be re-planted with others for winter and spring decoration. As fast as the plants are cleared off, the beds should be deeply dug over, and if thought to be necessary, a small quantity of decayed manure incorporated with the soil. At the time of writing, the earth in some of our beds is so dry that a soaking of water is necessary before re-planting, a very unusual thing at this date. Large beds, or those which occupy the middle area in flower-gardens of considerable dimensions, have a pleasing effect if thinly planted with small *Retinosporas*, such as those known in gardens as *R. pisifera*, *R. p. var. aurea*, *R. plumosa var. aurea*, *R. p. var. argentea*, *R. ericoides*, *R. squarrosa*, and the forms of *Cupressus Lawsoniana* in variety. The bed or beds so planted may be edged with a broad band of *Violas* or other dwarf-flowering plants mentioned below, and a ground-work of the same added where the *Conifers* are very sparingly employed in the beds. There are many other kinds of shrubs that are admissible in these winter beds, such as small plants of *Rhododendron hybridum*, well set out.

Andromeda floribunda and *A. variegata*; *Mahonia aquifolia*, *M. laurels*, *Phillyrea angustifolia*, which, if kept in small masses, may be continued in flower.

They may be continued in flower.

patches of distinct colours, as the Blood Red, I rose Dame, Belvoir Castle, yellow, look better mixtures. Other subjects for the spring garden *Violas*—these especially, and *Pansies*, *Myosotis*, *stiflora* and *M. alpestris Victoria*, *Daisies*, *Po* these, *Aubrietias*, especially high-coloured varieties like *Leichtlini*; *Silene pendula*, rose-coloured, *S. alba*, and *Saponaria ocymoides*, should not be ready for being set out as strong plants. They being of dwarf stature, are well suited for narrow or small beds, in conjunction with *Narcissus*, *Hyacinths*, *Squills*, *Tulips*, &c. *Saponaria* being in flowering, should, if possible, be afforded a position where it will not be necessary to clear the place away whilst still in their flush of beauty.

Hyacinths are trustworthy spring-flowering plants and should now be got quickly into the ground, large masses of colour are desired, beds may be thickly with bulbs at 6 to 8 inches asunder. These the soil of the beds, after digging, should be raked down and trodden moderately firm, and heavy, a good dressing of coarse sand should be raked into the surface to go in with the bulbs. In planting the bulbs, a blunt-ended dibber with a bar to regulate the depth of the hole, is the hand tool to use. The bulbs should be put with the point quite 4 inches deep. The most pleasing arrangement, however, is to associate *Hyacinths* with *Pansies*, *Violas*, *Myosotis*, &c., as then the beds have a better furnished appearance during the winter, and the display is continued after the bulbs are over. When this method of planting is practised, the ground plants should first be got in, and the bulbs put about 10 inches apart between them.

Tulips.—These should be planted forthwith. Remarks on mixtures applied to *Hyacinths* also apply here, although beds filled entirely with *Tulips* at 4 to 6 inches apart are very effective when of large size. When used in mixture with *Pansies*, *Violas*, *Aubrietias*, &c., we have pleasing contrast and a long season of display. The *Van Thol* seed are the earliest to bloom, and are also dwarf, they may be planted thicker than the larger-flowered varieties. *Canary Bird*, *Kaiser Kroon*, *Proserpine*, *Joost Van Vondel*, *Purple Crown*, *Duke of York* and *Prince of Austria*, are good varieties for beds, the two last being the latest to flower.

Other species of Bulbs.—*Daffodils* in variety are much used for spring bedding, namely, *Sir Walter* and those of the bicolor section, as *Horseshoe*, *Emperor*, and *Empress* are bold and free-flowered varieties, but the selection may be infinitely varied. *Snowdrops*, *Crocuses*, and *Scillas* should be planted thickly near the margins of beds and borders, and the early-flowering *Erythronium Dens Canis* is an effective plant in similar positions, its handsome foliage being an additional point in its favour. The roots of tuberous *Anemones* should be in the ground this month, giving them, if possible, a position where they may remain undisturbed for some years.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Birkford, Dorking.

Orchids now in Flower.—A few years ago *Orchids* were very scarce during the autumn months but the following list of plants now in flower will show that an advance has been made:—*Cattleya labiata*, *C. aurea*, *C. Bowringiana*, *C. Lord Radcliff*, *C. Mantini*, *C. Wendlandiana*, *C. bicolor*, *Laelio-Cattleya albanensis*, *Laelia Perrini*, *L. P. nivalis*, *L. P. alba*, *L. pumila*, *Dendrobium Phalaenopsis*, *Dearei*, *D. sanguinolentum*, *D. chrysanthum*, *Pleuro maculata*, *P. lagenaria*, *P. Wallichiana*, *Catasetus*, *Bungerthii*, *C. longifolium*, *Pilumna fragrans*, *Oidium aurosum*, *O. obryzatum*, *Vanda Kimballii*, *Habenaria militaris*, *H. carnea*, *H. c. nivalis*, *C. thum*, *C. Lawrebel*, *C. concolor*, *C. barba bellum*, *C. Sedeni*, *C. cardinale*, *C. purpureum*, *C. insignis*, *Sanderia*, *Paphia cristata*, *Zygopetalum maxillare*, and *Masdevallia macrura*. Some plants of *Cattleya Bowringiana* are already producing clusters of young roots from the base of the new made pseudo-bulbs, and such plants that require potting, although in bloom, should be attended to once. If repotting be delayed until the flowers be faded, the points of the new roots may be injured. *C. labiata*, too, should be repotted immediately the roots are observable. When *C. aurea* has passed the flower, keep the plants on the dry side until root action commences, and then afford fresh rooting material. The same remarks apply also to the other hybrids mentioned. Repot *Laelia Perrini* and other varieties immediately they have flowered. *Zygopetalum maxillare* thrives best if secured to a post.

of Tree Fern stem, and kept in a warm corner of the Odontoglossum-house, never allowing the plant to become the least dry at the root. *Dendrobium Phalaenopsis* requires a light position in the East Indian-house, and after the spikes of flower have been cut, water at the roots should be withheld. The same position will suit them when at rest, and their immediate surroundings should be kept quite dry. *D. Dearei* and the rich-coloured *D. sanguinolentum*, although in flower, are developing new growths. Suspend the plants on the shady side of the hottest house, and afford copious waterings each time the compost appears dry. *D. chrysanthum* suspended to the roof of the intermediate-house, should be kept perfectly dry at the root until growth recommences. *Pilumna fragrans* is best in the cool-house, and should be watered with care. *Oncidium obryzatum* also thrives best with the *Odontoglossums*. *O. aurosum* may be removed to the intermediate-house immediately cold weather occurs.

Vandas.—The present is the best season of the year to look to the roots of *Vandas* of the tricolor and *suavis* section. The plants do not like strong sunlight, and now that the sun is daily decreasing in strength, and the external air is cool and moist, a suitable atmosphere can easily be maintained in the house. This is a great help towards the re-establishment of the plants without loss of foliage. To re-pot them now is also favourable to the production of fresh roots. The old roots that will be buried in the new compost will quickly make numerous laterals, and they have plenty of time to become thoroughly well rooted before they have to withstand the heat of summer. It is principally those plants that have lost a number of their lowermost leaves that will need attention. In removing the plants from their pots, take care not to break or crack the large succulent roots unnecessarily. Shake the old compost away, and cut the bottom of the stem off so far as to allow the lower leaves, when the plant is transferred to the new pot, to be just on a level with the rim. Place the plant in its proper position, and make the drainage secure with a few pieces of crock, and over these a layer of sphagnum. Spread out the lower most roots carefully, and work in amongst them and the remaining roots some clean-picked sphagnum-moss, intermixing with this plenty of broken crocks. Fill up to the rim of the pot, and surface the whole with fresh healthy sphagnum. Press the materials down firmly, and tie each stem to a strong stick, to hold the plant in its proper position; this is important, as any swaying about will cause the lower leaves to turn yellow and fall off. Plants that are well furnished with leaves down to the rim of the pot should not be disturbed; but if the sphagnum-moss has become sour and decomposed, it may be removed, and fresh moss substituted. Following root-disturbance, no water should be afforded for several days; then the plants may be watered thoroughly, which will be sufficient to keep the moss damp for a considerable length of time. Each time the moss on the surface becomes dry, it may be sprinkled over to keep it alive. Give the plants a cool intermediate temperature, keep their surroundings moist at all times, and shade from strong sunshine, especially after repotting.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Ledbury.

Peaches and Nectarines.—If fruits are required early in May, trees should be forthwith got in readiness for starting; to force in the first week of November, and to have fruit to come in at the end of May, or the commencement of June, starting may be delayed till December 1, or a fortnight later than that date if the trees have been often forced. Getting in readiness means, that the trees be unfurnished from the trellises and pruned, then cleaned with Gishurst's compound, to which a small quantity of strong tobacco-water is added, using it at the full strength recommended by the makers, and applying it with a scrubbing-brush for the hard branches and shoots; and with a paint-brush, and at half-strength, for the soft, young shoots. See that the old ties are removed and burnt; be sure that the mixture is well rubbed in, and that no branches or shoots are missed by the operator. It is a very good plan, if the trees have been badly infested with black aphid or brown scale, to wash the trees twice, it being a saving of labour at a later date to make sure that the trees are quite clean now. As soon as the trees have got dry, they may be trained anew to the trellises, using tarred string or withes in securing the largest branches, and raffia for the weaker shoots; or, in case the trees are secured to a wall, make use of clean shreds and nails or studs and raffia. Be

careful to allow sufficient slackness in each tie, to permit full development of the shoots without constricting the rind, and to distribute the bearing-wood regularly; and leave a few young shoots to fasten over bare branches, thereby covering the latter with foliage, and improving the appearance of the trees, as well as affording protection from the sun, the lack of which is sometimes the cause of loss of branches. As soon as the trees are trained, let the border be cleaned up, and if the uppercrust is found to be sodden, or it has been much trampled upon, fork it up lightly, removing some of it, and affording a dressing of heavy loam and lime-rubble; but if the trees have been root-pruned, this will not be necessary, and a pointing of the surface where it is trodden down will suffice. Finally afford a slight mulch of long stable-litter, and lime-wash the walls. When the trees are started, afford the border a thorough application of tepid water, and close the house. At the commencement a temperature at night of 40° to 45°, 5° higher doing no harm if the outside temperature is high; by day 50° to 55° will suffice. Sprinkle the trees in the morning, and again at half-past 2 p.m. At this season progress is slow, but there is no need to hurry the trees—in fact, to do so will defeat the end in view; but the trees may be pushed on rapidly when the days are lengthening.

Later Peaches containing trees whose foliage still hangs on them should be kept well ventilated, the leaves being partially removed by drawing the hand lightly upwards, or a new birchbroom or housemaid's handbrush may be employed in the direction that the shoots run.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Winter protection.—It should be the aim of everyone in charge of a garden, be it large or small, to provide plenty of protective material during the autumn months, and to have it in readiness for use whenever it may be required to protect plants from frost. Bracken if cut early when ripe, and dried, and then stored in a shed, or made into a stack and thatched with straw, is of great use for this purpose. Bows of Hazel or Ash may be placed over the rows of Parsley to support garden mats, or light hurdles thatched with straw used instead. A good thick layer of coal-ashes should be spread over the crowns of Parsnips, Seakale, &c., in order to keep frost out of the soil, and allow roots to be lifted when required. This form of protection is a capital one for the preservation of the stools of Globe Artichoke during the winter. It should be placed cone-like round each plant, one barrow load being sufficient to cover one stool.

Herbs.—The border should now be cleaned up and put in order for the winter; beds of Mint, Tarragon, and such like herbaceous subjects should be weeded, decayed shoots removed, and a liberal dressing of short manure applied. New beds on a fresh site may now be made on fairly rich soil; or if the land be poor, some decayed manure may be dug into it when planting the roots. Place the roots thinly in fairly deep drills drawn 1 foot apart, and put a mulch of short manure over all as a finish. If the roots are not taken up for re-planting, it will still be necessary to chop round the outside of the clumps of Tarragon, Mint, and Marjoram, and fork out all straggling roots from alleys, and by the side of paths, the roots spreading so much generally as to become a nuisance if let alone. Shrubby herbs, as Thyme, Sage, Hyssop, Horseround, Winter Savory, &c., may have a dressing of short manure lightly forked in between the rows if to be left on the same site; but it is a good plan to re-plant these at the least once in three years, or the beds may become patchy, and the plants die out entirely, being smothered by their stronger neighbours.

Leeks.—Although Leeks are accommodating, and the hardest of winter vegetables, they require attention if blanched stems of a good length are required, and failing which, they are only of use for flavouring purposes. For this purpose it is customary to plant in trenches, and treat the plants similarly to Celery; but for kitchen use, stems 8 inches are long enough, and these are secured with less labour. If the Leeks were planted as advised, namely, in deep drills, that would be ultimately levelled by the hoe in killing weeds, the plants may now be earthed-up by simply drawing the soil up to them if they are planted sufficiently wide apart to admit of this being done; but if thickly planted, the desired blanching may be ensured by placing leaf-mould, cocoa-nut fibre, or coal-ashes, between the rows, care being taken not to break the leaves in doing this.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoe Park, Luton.

Bouvardias.—Plants which have been flowering since September should be afforded weak liquid manure-water, and if they have a stunted appearance, a sprinkling of Clay's or other safe artificial manure may likewise be given in addition. Let them be exposed to full sunshine, and the temperature of the house be kept at about 55° at night, and 60° by day. The spring-struck *Bouvardia*, which will form the next lot of flowering plants, should be copiously syringed until the first flowers have opened, when it must be discontinued. Desirable varieties are the following:—President Cleveland, flowers coloured scarlet; Mrs. Robert Green, and Priory Beauty, with pink flowers; and Vreelandi, with white ones, are good for flowering till late in the winter.

Souvenir de la Malmaison Carnations.—The house or pit in which these plants are grown may be, for safety's sake, fumigated with tobacco, or vaporised with XL All for the destruction of aphides at fortnightly intervals. Afford air abundantly excepting in very moist or foggy weather, and warm the hot-water pipes somewhat at such times and admit only a small amount of air. The plants will now require great care in affording water, and it is safer to err on the dry, than the wet side through the next three months.

Euphorbia Jacquiniflora and E. (Poinsettia) pulcherrima.—These plants thrive at this season if the warmth is maintained at 65° by day, and 60° by night, affording liquid manure-water liberally if they are pot-bound. The plants may be syringed on fine days, the house being closed early; but after colour appears in the bracts, syringing should cease, damping between the pots mornings and afternoons being done instead.

Zonal Pdaragoniums.—These plants should be afforded warmth of 50° at night, with a slight rise of say 8° to 10° by day, to such as are flowering, and an occasional application of clear soot water. Let the pots be washed and kept quite clean, and the decaying flowers removed.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Wintering Pot-Strawberries.—Many ways of wintering pot-Strawberry plants are recommended and practised, but, in my experience, the most natural, simple, and effective method of doing this is to plunge the pots below the rims in sifted coal-ashes, sawdust or leaf-mould. It is necessary that the site selected be high enough to prevent water accumulating about the pots at any time, and the aspect should be south or west. For many years I wintered pot-Strawberries in improvised frames (without covers) in which I used to grow my Wallflowers for transplanting to the flower-beds in October, and to harden off summer bedding-plants in the spring. These frames were about 7 feet wide, of varying length, and consisted of two 6-inch boards—sides and ends—secured to pointed wooden stumps driven into the ground at about 4 feet apart. Such frames are easily made, and they have a tidy appearance. The bottom, too, was hard, and the situation dry. The pots should be stood closely together on coal-ashes, so as to keep worms out of the pots, the plunging material being firmly packed in between the pots and carried above the rims to the thickness of about 1 inch. This covering will save the pots from being cracked by frost. Thus wintered I always obtained satisfactory results from my forcing Strawberry plants. It is unnatural as well as injurious to Strawberry plants to subject them to the "drying-off" process during the winter months, as is actually done by stacking the pots on their sides in rows, two or three thick in the open; and in pits and frames, seeing that the plants growing under natural conditions out of doors are never dry at the roots during the winter and spring.

Plantations of Strawberries should be hand-weeded, and after that is done, the land should be coated with short, decayed manure to the thickness of about 3 inches.

Raspberries.—Remove the superfluous canes of the current year's growth carefully from between the rows of fruiting-canecan, laying them in by the heels, for forming new plantations, and filling up vacancies. If the land be dry when new plantations are made, the plants should receive a heavy application of water, in order to settle the earth about the roots; and after the holes are filled in, and the surface made level, a mulching of half-rotten dung may be placed along the rows.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR NOVEMBER.

TUESDAY,	Nov. 2	Chrysanthemum Shows at Croydon, Plymouth, Devizes, Brighton, and Stratford-on-Avon.
WEDNESDAY,	Nov. 3	Chrysanthemum Shows at Ealing, Blackheath, Sunningdale, Lowestoft, Cardiff, Woking, Southampton, Wolverhampton, Isle of Thanet, Teignmouth, North Peckham, and Royal Horticultural Society of Ireland.
THURSDAY,	Nov. 4	Chrysanthemum Shows at Highgate and Exeter.
FRIDAY,	Nov. 5	Altrincham, Bowden, Sale and District Chrysanthemum Soc.
SATURDAY,	Nov. 6	Soc. Franc. d'Hort. London. Isle of Wight Hort. Assoc. meet.
TUESDAY,	Nov. 9	Royal Hort. Soc. Coms. National Chrysanthemum Society's Show at Aquarium (three days). Chrysanthemum Shows also at Kingston, Birmingham, Leeds, Croydon and Farnham.
WEDNESDAY,	Nov. 10	Chrysanthemum Shows at Liverpool, Eastbourne, Carlisle, Hanley (Staffs.), and Brixton. Harrison & Son's Annual Exhibition of Vegetables and Farm Roots, at Leicester.
THURSDAY,	Nov. 11	Chrysanthemum Shows at Putney, Hammersmith, Winchester, and Spalding.
FRIDAY,	Nov. 12	Chrysanthemum Shows at Sheffield, Wilmslow, Windsor, and Bradford.
TUESDAY,	Nov. 16	Chrysanthemum Shows at Belfast, Chester, Ipswich.
WEDNESDAY,	Nov. 17	Chrysanthemum Shows at Hull, York, South Shields, Reading, Buxton, Bristol.
THURSDAY,	Nov. 18	Scottish Horticultural Society's Chrysanthemum Show at Edinburgh (3 days).
FRIDAY,	Nov. 19	Chrysanthemum Shows at Huddersfield and Stockport.
TUESDAY,	Nov. 23	Royal Horticultural Society's Committees.

SALES FOR THE ENSUING WEEK.

MONDAY,	Nov. 1	Dutch Bulbs, at Protheroe & Morris' Rooms. Bulbs and Plants at Mr. Stevens' Rooms.
TUESDAY,	Nov. 2	Dutch Bulbs, at Protheroe & Morris' Rooms. Annual two days' sale of Immense quantities of nursery stock at the Hale Farm Nurseries, Tottenham, by order of Mr. T. S. Ware, by Protheroe & Morris (two days).
WEDNESDAY,	Nov. 3	Bulbs, Plants, Roses, Fruit Trees, Shrubs, &c., at Mr. Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 4	Bulbs and Plants, at Mr. Stevens' Rooms. Dutch Bulbs at Protheroe & Morris. Sale of well-grown Nursery Stock at the Burnt Ash Hill Nurseries, Lee, by order of Messrs. B. Malter & Sons, by Protheroe & Morris.
FRIDAY,	Nov. 5	Dutch Bulbs and Orchids at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 6	Bulbs and Plants at Mr. Stevens' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—45° 1'.

ACTUAL TEMPERATURES:—

LONDON.—October 27: Max., 58°; Min., 46°.

PROVINCES.—October 27 (6 P.M.): Max., 58°, Scilly; Min., 45°, Ardrossan.

Weather generally dull; foggy, mild.

The Victoria Medal of Honour. It has often been made a subject of complaint that gardeners receive no public or official recognition. Whether they are worse off in this respect than the members of other professions

may be doubted; still, the complaint shows the necessity that is felt in this country for establishing an "Order of Merit" for other than political services and financial success. What sort of honour is it that is conferred on a professional man, an artist, a man of science, when he is associated with men whose only claim to distinction is measured by their services to their political party or municipality, or by the balance at their bankers? What honour did TENNYSON derive, in public estimation, from admission to the House of Peers? Can we suppose that a NEWTON, a DARWIN, an OWEN, a HUXLEY, a LINDLEY would have been more honoured by being made Peers? And yet such men were clearly deserving of the highest honour that could be paid them, and being human, they would not have been averse from accepting it. The point is, that the honour should be a fitting one. The honours conferred on military and naval men, and on civil servants of the Crown, are usually appropriate enough, but the comparatively few official compliments bestowed outside the "services" are often incongruous, and suggestive of ridicule rather than of respect. This arises partly from the mixed company to which the honoured one is ushered, partly from the fact that the compliment is conveyed through ministers or others who can have nothing but a hearsay acquaintance with the merits of the recipient.

It is otherwise when the honour comes from, or at least is suggested by, a man's associates, who have the opportunity of knowing and of judging the value of their colleagues' labours. From this point of view the Victoria Medal of Honour, instituted with the QUEEN'S consent, by the Royal Horticultural Society, is peculiarly valuable. The Council of the Society, as we have reason to know, sought, in confidence, the opinion of numerous representative men in various parts of the country as to who would be suitable recipients of the Medal.

Having such a mass of opinion before them, it then became the duty of the Council to proceed to the very difficult and delicate task of selecting the sixty. The final selection is by no means ideally perfect; but, at least, it has been arrived at after anxious care and strict impartiality. We are proud to think a hundred more equally worthy (with one or two exceptions) could easily have been found, hence those on whom the honour was conferred will, of course, look on themselves in the light of representatives of others. It is difficult to see how, on the whole, the selection could have been better made, and it is equally difficult to see how the list could have been improved when many of those who, by universal verdict, would have found a place therein, felt themselves debarred, from one cause or another, from being nominated.

In any case, high festival was held at the Royal Horticultural Society on Tuesday last. The occasion was unique. It is likely to remain so. The warm applause with which the recipients of the medals were greeted showed conclusively that the movement had the sympathy of the audience. We can but congratulate the Society on the success of this novel and hazardous venture; and we felicitate those of our friends and colleagues who have so richly merited the compliment made to them.

Every effort should now be made to jealously maintain and enhance the honour; hence it may be desirable to add that the use of the honour for advertising or other commercial purposes is entirely opposed to the whole spirit of the scheme, and should be sternly deprecated.

There are happily some things which cannot be estimated by a monetary standard, and this is one of them.

The medal itself is an elegant and artistic production, a trifle larger than a shilling, the work of Miss MARGARET GILES, and is much admired by connoisseurs. We are a little puzzled to know which is the obverse and which the reverse, and we think that space should somewhere have been found for the addition of the recipient's name. Perhaps even now the rim of the medal may not be found too narrow to make this addition, failing which a diploma of some sort should also be sent to the medallists recording the fact of the award.

One other point—the council, as we think judiciously, declined to allow their own names to be put forward, though there are several of its members amply deserving of the compliment. Probably an opportunity will occur hereafter of adding their names as vacancies occur.

But what applies to the council, does not apply to the Secretary and Treasurer, still less to the President. In our opinion these gentlemen, and most particularly the President, should be Victoria medallists by virtue of their office. This is an omission that can be rectified at the next annual meeting. As it is, the medallists constitute a body without a head.

A detailed account of the very interesting proceedings on Tuesday last will be found in another column.

THE DUCHESS OF TECK.—The Duchess was so well known to horticulturists as an ardent lover of flowers, that the announcement of her death will be received with great regret. Residents at Kew, and more recently those at Richmond, as well as frequenters of the "Botanic" will miss her, and many a charitable institution will be the poorer, and the weaker by her decease. To a former generation, as Princess MARY, she was endeared by her geniality and willingness to aid in all works of good fellowship and charity. To her was dedicated Messrs. MOORE & JACKMAN'S volume on the Clematis, so that her name will be associated with one of the most remarkable triumphs of Horticulture.

SOLANUM CORNUTUM.—Many of the best of the "sub-tropical" species of Solanum are exhibited every summer in the Cambridge Botanic Garden, and among them *S. cornutum*, the subject of the illustration (fig. 94), is remarkable, not only for its beautiful foliage, but also for its effective golden-yellow flowers. Unlike the majority of these Solanums, it appears to be strictly annual, and while some others, to produce the finest effect, must be sown some time during the preceding year, this can be sown with other annuals in spring. It may even do fairly well if sown in the open, under favourable conditions; but the only safe plan is to sow in gentle heat during March, and plant out from large 60's, or preferably 48-pots, early in June. The flowers are so beautiful, and the leaves so handsome, that it is well worth all this trouble. It provides a good bed or group, and few would say they had ever seen the plant before. As grown at Cambridge, it reaches a height of from 18 inches to 2 feet. The stems are branching, comparatively slender, green, and covered with slender spines, as are all parts of the plant, in greater or less degree, up to the corolla. The leaves are light green, about 4 inches long, and divided in a manner which is better understood from the illustration than from any description. The flowers are produced in raceme-like cymes to the number of nine or a dozen, and are rather more than an inch in diameter. They are produced in succession, and one or two only are open at a time, but the cymes are very numerous, no good leaf failing to have one belonging to it. As the flowers wither, numerous small fruits, covered with numberless

slender spines, are formed, and these fruits form a very distinctive and attractive feature. This plant has been grown for the nearly allied *S. Fontanesianum*, and seeds under that name were received from Messrs. HAAGE & SCHMIDT, but by Kew determination it proves to be *S. cornutum*. Its native country is Mexico [see JACQUIN'S *Ecloga*, t. 104]. *R. Irwin Lynch, Cambridge Botanic Garden.*

LINNEAN SOCIETY.—The first meeting of the Society for the forthcoming session will be held on Thursday, November 4, at 8 o'clock, P.M., when the following papers will be read:—The Right Hon. Sir JOHN LUBBOCK, Bart., M.P., F.R.S., "On the Attrac-

house & Sons, and Messrs. Geo. Bunyard & Co., Maidstone. A paper on "Hardy Fruits, their Cultivation and Improvement," read by the Rev. Gordon Salmon, was listened to with much interest.

JAPANESE TUSSILAGO.—The *Moniteur d'Horticulture* gives an account of these plants. The scented Tussilago (*T. fragrans*) bears flowers white, red, and shading into rose, diffusing a sweet scent as of Heliotrope, and is sometimes called Winter Heliotrope. Hitherto *Petasites*, a name which is connected with parasol, has been looked upon as an ornamental plant only, but now MM. CROUX & FILS of Aulnay (Seine) have introduced

October 20, Colonel HALFORD THOMPSON, the patentee and chairman of directors, presiding. The directors' report was of a very satisfactory character, the year's trading having severely taxed the manufacturing capacity of the present plant, and made it almost imperative that the premises be enlarged, to cope with the fast increasing demand. They recommended a dividend of 10 per cent. on the paid-up capital. The Chairman, in moving the adoption of the report, spoke of the highly favourable reports which had been received from the Vine-growing districts of France—Charente, Cognac, &c.; of the success of Jadoo in Tobacco-growing in Pennsylvania, Orange trees in the West Indies, general horticulture



FIG. 94.—*SOLANUM CORNUTUM*: FLOWERS YELLOW. (SEE P. 310.)

tion of Flowers for Insects." Mr. W. C. WORADELL, "On Transfusion-tissue, its origin and function in the leaves of Gymnospermous Plants" (communicated by Dr. D. H. SCOTT, F.R.S., F.L.S.). Exhibitions—Mr. F. G. JACKSON: Some Zoological and Botanical Exhibits, collected by the Jackson-Harmsworth Polar Expedition. Mr. REGINALD LODGE: Lantern-slides of Marsh-birds and their nests, from photographs recently taken in Spain and Holland.

THE ANCIENT SOCIETY OF YORK FLORISTS met on the 22nd inst., when a very fine exhibition of hardy fruits was made, including collections from the Archbishop of York, Lord Hotham, Lady Decies, Dr. Hingston, Rev. Gordon Salmon, Messrs. Back-

from Japan a new giant variety, which is useful as well as decorative. It is edible, the petioles can be utilised much as is Rhubarb, and the flower-buds can be pickled in vinegar. But the chief value of these *Petasites japonicus giganteus* appears to be in rain or sunshade. Surprised by these, it is only necessary to gather a leaf of this Composite, and immediately you have a sunshade or umbrella, with a handle or leaf-stalk 6 feet long, and at the end a large rounded leaf, forming a shelter from sun or rain! A quaint little Japanese sketch gives a presumably correct idea of the leaves when used thus.

JADOO, LIMITED.—The second ordinary general meeting of this company was held at Exeter on

in Natal and other parts of South Africa, in India, Australia, and pretty well all over the world. It is probable that manufacturing branch depôts will be set up in Natal, Philadelphia, France, and other distributing centres where Jadoo is becoming well known and in great demand. The Chairman pointed out that this new material might still be considered as being in an experimental stage, but that experiments and results so far indicated that the company was well on the road to be a great success. The accounts showed the total liabilities of the company to be £8189 2s. 4d., including a sum of £630 14s. 5d. carried to the appropriation account. The assets were: By debtors, £1763 5s. 10d.; stock, £1164 1s. 1d.; building, plant, machinery, &c., £590 16s. 3d.; patent rights,

trade-marks, &c., £2935 8s. 11d.; French agency, £144 4s. 3d.; cash in bank, £1588 8s. 9d.; in hand, £2 17s. 3d. The accounts were audited by Mr. P. J. LIDDELL, Incorporated accountant.

DAHLIA, KEYNES' WHITE, IN GERMANY.—Quite recently, two of the leading horticultural societies in Germany, the Verband der Handelsgärtner Deutschlands and the Verein der Kunst- und Handelsgärtner, Berlin, have in each case unanimously awarded a certificate (Werthzeugnisse) to this new Cactus Dahlia, raised by Messrs. KEYNES, WILLIAMS & Co., of Salisbury, and which they intend to send out for the first time next spring.

CATTLEYA LABIATA.—The first exhibition of flowering specimens of this beautiful Orchid will be held at 79, Rue Wierz, Brussels, from the 7th—9th of next month. A very fine exhibition is anticipated. There will be no competitive groups, but prizes of various kinds will be allotted by the jury to deserving exhibits.

PLANTS IN THE HOUSES OF M. EM. BEDINGHAUS.—M. BEDINGHAUS' plants (at Wondelgem, Ghent), coming from Japan, Chili, the Cape, New Holland, Van Diemen's Land, New Zealand, and other countries form a most interesting collection. Wondelgem is known in the horticultural world through the large establishment there owned by M. DE GHELLINCK DE WALLE. M. BEDINGHAUS' specimens are all well cultivated, and richly repay a visit even when not in bloom. I noticed on my visit in early October, thirty varieties of indigenous Ivies from Russia, Algeria, Ireland, Japan, &c., of which the most curious is *Hedera helix conglomerata*. There are also *Smilax maculata*, *Agave salmiana*, *Euonymus radicans* fol. var. grafted on *Euonymus japonica*, and making a pretty standard; a large specimen of *Genista Andréana*; one of *Erica arborea*, 6 feet high by about 12 feet round; and *Acacia grandis* from Western Australia. *Tremanda verticillata* is certainly a fine flowering plant; *Sollya heterophylla*, a Pittosporaceae plant, is an old favourite; *Lapageria rosea* and *alba*, grow here in a conservatory facing the mid-day sun, and flower well. I also noted *Cuphea Llavea*, D.C., introduced from Mexico in 1829; the old *Fuchsia pulchella*, *Cuphea eminens*, or rather *C. jorullensis*, also from Mexico. *Phygelius capensis* is an interesting plant, which, like *Pentstemon*s, should be more widely cultivated. In the open air, and very healthy, are *Thea Bohea*, *Veronica diosmaefolia* and *buxifolia*, pretty specimens; and *Acacia platyptera*, very peculiar. *Correa flava* is also an old plant, *Boronia viminea* major and minor, and *Bauera rubioides*, introduced from New South Wales in 1793, also grow here. Among the finest *Acacias* are *A. lineata*, *pendula*, *Drummondii*, *verticillata*, and *paradoxa*; *Adenandra fragrans* from the Cape, and *Escallonia macrantha* from Chili; the former known since 1812, the latter since 1848, deserve notice, as does also *Diosma ericoides*, introduced from South Africa in 1756. Here are also *Eutaxia myrtifolia*, cultivated, like a *Chorizema*, *Eleagnus reflexa* fol. var., 13 feet round; a very large *Brachysema acuminatum*, *Chorizema splendens*, *Metrosideros*, *Araujia sericifera*, a curious Brazilian *Asclepiad*, *Kennedya purpurea*, *Pultenaea striata*, and *Illicium religiosum* or *I. anisatum*. This brief list will give some little idea of M. BEDINGHAUS' treasures. *Ch. De B.*

A NEW USE FOR RAFFIA.—Raffia does not, at first sight, appear likely to meet with the approval of ladies who excel in fancy work, but that it may be thus turned to account—and to very good account, too—has lately been seen. Some curtains that we saw a few weeks ago in one of the quaint streets of the old French town of Laon, claimed our attention as a novelty, and it was with some surprise that we found that Raffia was the material used for their manufacture. They consisted of a number of rosettes made, as we were told, by an expert with a crochet-hook and a gigantic hairpin, known to ladies as a fourché hook, or fork, and were finished with a border fashioned with the same tools. For windows, whence it is necessary to hide the outlook,

for porches, verandahs, summer-houses, and conservatories, such curtains would be likely to prove both useful and durable. No doubt the idea could be improved upon, and there would be little difficulty, probably, in dyeing the bast were its natural biscuit colour not considered sufficiently ornamental.

FORCED STRAWBERRIES.—Some of the points in the cultivation of Strawberries under glass which appeal to us with special force are these:—1. Very strong plants to begin with, which have been kept in vigorous growth, and not allowed to become pot-bound until they have reached 6-inch pots. 2. Varieties which are early, or at least not later than mid-season; and preferably those which themselves produce an abundance of pollen. 3. The exercise of great care to have the plants free of fungous diseases and insects before they are put upon the benches. 4. The devoting of an entire house to the crop. If two or three different crops are grown in the same house, none of them can receive the very best treatment which they demand; and if there are other plants in the house which are infested with red-spider, the pests will spread to the Strawberries, and it is very difficult to dislodge them without keeping the plants so wet that pollination is interfered with, and rot threatened. 5. Growing the plants as close to the glass as possible. 6. In the dull months, constant and careful attention to hand pollination. 7. Liberal applications of liquid-manure two or three times a week after the fruits have begun to swell. 8. Exercise of care that the berries do not lie directly upon the soil or upon a wet surface. We are by no means confident that we have found the best methods of forcing Strawberries. We give our experience for what it is worth, and desire to correspond with persons who can help us to better results. *C. E. HUNN, and L. H. BAILEY, Cornell University Experiment Station.*

WEBBS' BARLEY COMPETITION.—The valuable prizes for Barley offered by Messrs. WEBB & SONS of Worsley, Stourbridge, brought a keen competition, and the Champion prize in Class 1, open, for £25, fell to Mr. NISBETT, Stratford St. Andrews, Saxmundham, Suffolk. In Class 2, open to Salop, Stafford, Hereford, Worcester, and Warwick, the 1st prize, £15, was awarded to Mr. E. BOMFORD, Spring Hill, Fladbury; 2nd, £10, Mr. W. CHICK, Sutton Maddock, Shifnal; 3rd, £5, Mr. G. CORBISHLEY, Bricklehampton Court, Pershore. The conditions of competition stipulated that the Barley should be one of WEBBS' varieties, and grown with Webbs' Special Barley-manure. The samples exhibited were of high quality.

BRITISH ASSOCIATION.

In the Botanical Section of the British Association a communication was contributed, "Upon a Disease of Tomatos," by W. G. P. ELLIS. From diseased Tomatos received in August, 1896, from Jersey, the associated fungi and bacteria were isolated and cultivated on nutrient gelatine, and the mycelium was traced in sections of the fruits. On removing the fruit-skin, with carefully sterilised instruments, the mycelium within the fruit formed, in a short time, the well-known sporangio-phores of *Mucor stolonifer*. Though late in the season, infection of sound plants at the University Botanic Gardens, Cambridge, from pure cultures, caused a disease resembling that of the fruits received in August and September from the grower. Experiments are in progress to determine: (1) Whether the fungi obtained, other than *Mucor stolonifer* cause disease? and (2) The site of infection; also a note "On spermatozoids in *Zamia integrifolia*," by H. J. WEBBER. Mr. Webber gave a short account of his recent discovery of the existence of large multiciliate spermatozoids in the pollen-tube of *Zamia integrifolia*, a Cycad which he investigated in Florida. The facts brought forward by the author of the paper were of exceptional interest; he described the development of an unusually large antherozoid from each of the daughter-cells, formed by the division of the generative-cell in the pollen-tube, each antherozoid being

encircled by a spirally disposed ciliate band, which the author believes to be developed from the fragments of a centrosome-like body. Mr. Webber observed the discharge of the antherozoids from the pollen-tube, and followed the passage of the motile male-gamete into the archegonium. The entire antherozoid swims into the archegonium, passing between the ruptured neck-cells. Several antherozoids commonly enter each archegonium, but only one of them takes part in fecundation. The method of antherozoid formation in *Zamia* is regarded as similar to that in *Cycas* and *Ginkgo*.

A paper "On the species of *Picea* occurring in the north-eastern United States and Canada," by Prof. D. P. PENHALLOW. Since the time of Pursh, the validity of the red Spruce as a distinct species has been generally denied by systematic botanists. In 1887, Dr. George Lawson maintained that the red and black Spruces are distinct species. This view has been sustained during the last year by Britton, in his illustrated *Flora of North America*. Prof. Penhallow's studies have led him to the conclusion that there are abundant reasons for the separation of *Picea rubra* as a distinct species. Incidentally, attention was directed to a form of the white Spruce characterised by its foetid odour, and its strongly glaucous, rigid and often cuspidate leaves, which are commonly broadened at the base. The name of *P. foetida* is suggested for this form. "Nature," October 21, 1897.

ORCHID NOTES AND GLEANINGS.

CYMBIDIUM TRACEYANUM.

A FLOWER of a very fine variety of this rare and showy species, which was illustrated in the *Gardener's Chronicle*, January 31, 1891, p. 137, is sent by Mrs. HOLLOND, Wonham, Bampton, Devonshire. The flower is over 5 inches across, the sepals and petals bright light green, profusely marked with dotted lines of a peculiar reddish-crimson tint. The lip is white spotted with red, and bearing on its crest two ridges of hair-like processes. The under-side of the column is striped with red, and the side-lobes of the lip similarly striped. Viewed in any aspect it is a charming flower, and with a strong light behind it resembles a transparent painting.

CATTLEYA DOWIANA AUREA.

Three grand flowers of this beautiful and fragrant Orchid are sent by James Fortt, Esq., Green Street, Bath, and they are remarkable, as they exhibit great variation in colour, and in the gold and crimson markings on the lip. The one has bright lemon-yellow sepals and petals, and a very large crimped labellum, the base of which is dark crimson, with golden-yellow lines radiating into a lighter yellow area inside the purplish-crimson margin, the front being ruby-crimson. Another has lighter yellow sepals and petals, and rich purplish-crimson lip, the side-lobes and basal half of the front lobe of which is closely veined with bright yellow. The third has the sepals and petals light yellow, slightly tinged with rose at the back, and the yellow-veined base of the lip is suffused with red, the front being dark rosy-crimson.

AUTUMN TINTS.

In our variable climate it is seldom we have such a fine autumn as the present, for with the exception of September 29, when '80 of an inch of rain fell, the rainfall since that date has been very light in Sussex. Neither have we had in this part any frost to speak of, and on only four occasions has the temperature fallen below freezing point, the coldest morning being that of October 8, when the temperature fell to 27.5 or 4½ degrees of frost. We have had no high equinoctial gales such as are commonly experienced, and all these immunities combined with bright sunshine have ripened the wood shoots of trees and shrubs so much, that the tints of the foliage at the present time, October 19, are charming to a degree rarely seen. To give an idea of the beautiful weather, we have only to pass along the country

lanes and take note of the hedge-rows. Some of the Blackberry leaves are of a glowing crimson, while the fruit hangs in clusters such that I have never before seen in the months of August and September, and were it not that we are reminded by the fading foliage and the shortening of days that we are nearing the end of the year, one might imagine that autumn was but commencing. Here both on the 17th and 18th the temperature reached 65° in the shade, and did not fall below 50° at night. The plantations and the plants in the shrubberies present a lovely picture at the present time, which words fail adequately to describe, or pencil to paint. The crimson leaves of the wild Cherry stand out well amongst others in the woods, as does that of *Viburnum Opulus*, the wild Snowball; while that of the Dogwood is fast changing. The beautiful golden of the Horse-Chestnut and the Elms; the bronzes of the Castanea vesca, and several others, are very conspicuous. Coming to the choicer shrubs, we must certainly give the palm to the foliage of the Ghent and Mollis Azaleas. Plants here that had grown too large, were cut down to within 2 feet of the ground three years ago, have now made large bushes again. The wood being robust, the foliage large, the latter present a far more effective display than did the flowers, although these were indeed very beautiful. Many of the Maples, too, in this respect, have this year put on very gorgeous tints. *Liquidambar styraciflua* is more beautiful this year than I have ever seen it before. Old trees that are somewhat stunted having ripened their wood thoroughly, present a picture easier imagined than described, as they have foliage of various hues. A large plant of *Ampelopsis hederacea*, which has climbed all over a dead tree, has covered its bare branches with the finest mantle of crimson that it is possible to behold. The bright foliage of the Scarlet Oak is nothing in comparison with this plant with its long loose growths hanging gracefully from the dead branches. The deeply cut foliage of *Rhus glabra laciniata*, and that of *Kelreuteria paniculata*, have been very beautiful, but the slight frost we experienced a short time back caused the former to wither. The foliage of *Rhamnus Frangula*, *Amelanchier canadensis*, *A. arbutifolia grandiflora*, *Prunus pissardi*, and some of the *Berberis*, have assumed tints this season that are seldom seen. Here, then, we have a guide as to planting, so that the most effective combination of colours may be produced in the autumn. Useful as are the evergreen shrubs for hiding ugly buildings, or making breaks against the wind, their foliage can never assume those glorious tints we have had the pleasure of beholding this autumn, neither can they have the same graceful habits that many of them possess. Take for example the long slender growths of *Deutzia crenata*, the foliage of which this season has been a perfect picture. Many of our deciduous-flowering shrubs are but too little known, for not only do their flowers in spring gladden our eyes, but the fruit of many of them is also attractive in the autumn, and the foliage, as has been pointed out, is pleasing still. There are many of our woodland walks, carriage drives, and wayside paths, that might be made beautiful at a little cost if only the right materials were employed. Such work, however, is often entrusted to those who have little taste or knowledge how to produce effect.

In the many miles of carriage-drives in some places where the soil is most suitable for growing many of the things named, and the situations all that could be desired, instead of their being planted, nothing is to be found except the common Hazel-nut, Wych Elm, or Birch, and other like coppice stuff that can be turned into faggots. Rabbits, we know, are fond of many of these, but not more so than of some others; therefore, there can be no excuse for not planting. I have never known them touch any of the Azaleas or *Deutzia scabra*, and we have thousands of these planted here; neither do they care for many of the others, unless hard driven in the winter.

The Crab, Cherry, Prunus, and many more, such as the Scarlet Oak, Maple, and Berberry, might be planted in quantity along the sides of drives. This season many of them, too, are fruiting in abundance. The Thorn is covered with its red shining

berries; the Dartmouth Crab has been most conspicuous, as also the Siberian one; while *Crataegus Pyracantha crenulata* and *Lalandi* are now covered with clusters of shining fruit. True, these last-named are evergreen, but there are some of these that may be employed with advantage along our woodland walks, or wilderness gardens, for by a judicious selection and planting, they can be introduced in such places in quantities as will render them most useful. As the time is now at hand for planting, this ought to be borne in mind, that a selection may be made. *H. C. Princep, Buxted Park.*

HOME CORRESPONDENCE.

SHRIVELLING OF VENN'S BLACK MUSCAT GRAPE.—I am very pleased to see by this week's *Gardeners' Chronicle*, p. 294, that Mr. D. T. Fish passes a few remarks on the above, and at the same time recommends what I should consider an excellent remedy for testing Vine borders. If you think the following few particulars would be any assistance to unveil the mystery connected with the Vine in question, I am most pleased to give them, namely: the depth of the border is 3 feet, and below that is a layer of drainage of 15 inches. I cannot give a definite statement of the fall of the drain from the border. I should say the fall is good, judging by the quick disappearance of the water. The width of the border inside the vinery is 9 feet, which is on a dead-level; the outside border is 12 feet wide, with a fall of 14 inches. Upon inquiry, I find the border is 15 years old, and is probably older than that. I do not suppose that excess of water is the cause of shrivelling, as the water disappears so quickly from the surface. I make a point of thrusting a stick into the border down to the drainage, to ascertain its condition before watering. If the stick comes out clean and dry, I give a plentiful supply of water during the growing season, as stated before. *Vine.*

GROWING MUSCAT OF ALEXANDRIA GRAPES.—In looking over the "Home Correspondence column" of a recent issue of the *Gardeners' Chronicle*, I noticed this heading: "Some Hints on Growing Muscat of Alexandria Vines." Now in order to be able to grow this fine Grape to perfection, gardeners are always eager for any information; but I am afraid the hints given in the letter referred to will be of little assistance, if they be not a trifle misleading. The writer says, careful ventilation is necessary during this season (September), if good flavour is to be obtained. Most growers are of opinion that careful ventilation is necessary during the whole summer and autumn, and if this is properly attended to, there will be no need for a double thickness of fish-netting to prevent scorching of the leaves. Muscats require all the sun we can give them, and the foliage, by timely ventilation, is rendered firm and able to withstand the hottest rays, provided the openings are large enough to prevent the temperature rising above the prescribed limit. Special care is necessary after dull days which tend to soften the leaves and render them more susceptible to injury; and if the clouds lift in the middle of the day, without ventilation being at once afforded, scorching is certain to follow. Better to anticipate the rise and prepare for it, than wait till a certain point has been reached. All cultivators agree in saying that the Grapes, to keep well, must be ripe by the end of September, and the flavour is better than when the ripening process is continued to a later date. Many more hints should be forthcoming to assist us in growing this Grape to perfection. *B. W.*

DO ORCHIDS DEGENERATE?—Perusal of Mr. Simcoe's remarks on this subject (*Gardeners' Chronicle*, October 16), discloses the fact that he falls into the common error of applying the term "degenerate" to subjects which die in gardens from preventable causes, and (in the present stage of our knowledge of the treatment requisite) unpreventable, and especially to the plants which cannot be induced to thrive continuously while "infested with yellow thrips," or placed in houses in which a healthy atmosphere cannot be maintained in winter. The fact that some or other of our Orchid-growers grow most of the plants he enumerates satisfactorily, proves that the decline in them complained of is not due to anything in the nature of the plants themselves, but to the want of knowledge regarding the proper treatment of them, or, in by far the greater number of instances, to the gar-

dener in whose hands they have been placed not having proper accommodation for them. Hence the remark of the hopeful modern gardener, "I cannot yet find the right place" for such and such things; and his repeated endeavours to find proper quarters for his refractory subjects. This way of looking at the matter has brought countless conquests, and more will follow if the pursuit is continued in the same spirit. But no one attempts to deny that a great number of Orchids perish under cultivation, and that, generally speaking, but little blame is to be attached, in most cases, to those who have charge of them. Yellow thrips, as Mr. Simcoe says, work great mischief among Orchids, and scarcely less harmful are the old-fashioned fumigators which most growers have abandoned in favour of the modern safe vaporizer. Necessarily the cultivation of Orchids brought from widely separated districts, and from varying altitudes, in the same house, or set of houses, presents many difficulties, but I am convinced that there is nothing in the nature of Orchids to render them more difficult to grow than the other occupants of our plant-houses. On the other hand, I am sure that a large proportion of the species will live and flower under conditions which would soon cause the death of other classes of stove or greenhouse plants. *James O'Brien.*

SEEDLING ORCHIDS.—One is struck with the great interest taken in the cultivation of Orchids, and especially in the great number of cultivators interesting themselves in the raising of seedlings. It is no strange sight to see hundreds, nay thousands, of carefully hybridised seedlings, in all stages of growth, from the smallest seedlings to the flowering stage, and the great variety of forms and colours to be found among them. What a change in a very few years! *J. Grieve.*

BORDEAUX MIXTURE AND THE POTATO DISEASE.—Lately, when on a visit to Dunbar, I was greatly struck with the effects of the spraying on hundreds of acres of Potatoes, which were as green in the haulm as at midsummer; while crops which had not been sprayed on the other side of the road were quite in a bad state. The farmers expect to lift from 1 to 3 tons more Potatoes per acre from those sprayed, and it is gratifying to see how sharp are the farmers in this part of Scotland to take advantage of this apparent blessing. *James Grieve.*

BORDER TESTER.—The border tester mentioned by Mr. Fish (p. 296), or one similar, has been in use in this country, to my knowledge, for upwards of thirty years. My first experience of it was at Wilton House, Salisbury. Mr. Challis, the present gardener, I believe, introduced it there, and as a subordinate, it was my duty to test the borders weekly. Since then I have distributed many amongst my gardening friends. The original cost is only one-sixth the price of the above-mentioned tester, thus placing it within the reach of all, as one will last a lifetime. *S., Yorks.*

—Your able correspondent, "D. T. Fish," in last week's *Gardeners' Chronicle*, p. 294, in describing this instrument, says, that up till recently there was no other means of testing Vine or other fruit-borders than by excavating small holes down to the drainage. Perhaps Mr. Fish is unaware that more than twenty years ago Mr. Sorby, then gardener to the late Mr. Russel, of Mayfield, Falkirk, had an instrument such as Mr. Kirk's then in use. Many a time I have used it on outside Peach-borders, and also in a house where large Camellias were planted out on raised borders. Whether Mr. Sorby ever brought his tester before the public I am unable to say; but as far as I know he is still residing in Falkirk; and should this meet his "eye," it would be interesting to know whether he ever did so, or if he protected it in any way. *James Cocker, Chesters.* [Several communications of the same import as the above have been received. *Ed.*]

LAPAGERIAS ALBA AND ROSEA.—In a lean-to conservatory, 21 feet in length and 15 feet wide, facing full east, we have two very fine specimens of *Lapageria* that yield upwards of 2000 blooms each year. Planted out in a prepared border of peat, loam, and silver sand, with a small addition of broken charcoal, they are given a copious supply of water once a week. The plants cover the whole roof and end of house with excellent foliage and wax-like blooms, which we find very useful for indoor decorations. They last about a fortnight, if gathered

with a good stem and placed in water, and the water is changed occasionally, at same time cutting off about half an inch of the stem. At the time of writing there is a fine cluster of the white variety with twenty-nine flowers growing on 5 inches of stem, and forming quite a bouquet in itself. I hope many more gardeners will be induced to cultivate this beautiful climber in the same position as ours. *J. R. Alyn Bank, Wimbledon.*

GOODEIA BUTTERFLY.—This beautiful hardy annual, introduced from California in 1835, is of easy culture, and the plant continues to flower all the summer. It grows about 18 inches high, and is suitable for mixed borders and small beds. Sow seeds in light soil in the first week in April out-of-doors. The seedlings must be thinned-out as soon as large enough, that each plant may become vigorous. The flowers are white, with a crimson blotch. *Wm. Smylie, The Gardens, Basing Park.*

LOBELIA CARDINALIS VAR. QUEEN VICTORIA.—For bright effective beds, or massing in borders, the above is one of the very best plants for an autumn display. It should be planted thinly in bold masses, with a groundwork of either *Viola Bullion* or *Centaurea candidissima*; either of these make a very pleasing combination, as even before the flower-spikes throw up, the dark crimson foliage of the *Lobelia* is very effective with either the *Violas* or *Centaureas*. In very sheltered, warm spots this section of *Lobelias* can be left outside all the winter, but it is much safer to lift and store them in boxes filled with leaf-mould in a cold pit, dividing and planting out again in April, after establishing them in pots by the aid of mild heat. The variety *Firefly* has larger flowers, but its foliage and habit are inferior compared with *Queen Victoria*. *W. B. G.*

DO PIGEONS EAT SLUGS?—Canon Ellacombe, in the *Gardeners' Chronicle* for October 16, wanted to know if it was true that pigeons eat slugs. There is, I think, but little doubt that these birds feed on the very small kind of slugs; but that they feed abundantly on them is another thing, and the birds are certainly a pest in any garden that they frequent, devouring the seeds and the leaves of plants, especially *Echeverias* and *Onions* in the young state. In my opinion, pigeons do a great deal more harm than good. *A. Smith, Harewood House Gardens, Hendon.*

CARNIVOROUS SLUGS.—I notice a correspondent asking for information of localities where *Testacella haliotidea* are to be found. They are very plentiful in the kitchen garden here. Early this spring some trenching operations were being carried on, when no fewer than twenty-seven were turned up in onespade-ful—two or three is a common occurrence—but I have never seen so many together before. I placed them before a meeting of members of the Beckenham Horticultural Society, and numbers of practical gardeners present, who were quite unaware of the fact that they were carnivorous; and although I offered them to anyone, as stock, they were looked upon doubtfully by some, and I brought them back again. I am of opinion that they are very beneficial to gardens, living entirely upon worms; I have often found them swallowing a worm alive—have never met with them in my experience before in the northern or midland counties or South Wales. I do not think gardeners in general are well acquainted with them; and to help some of them to distinguish this friend from a foe, I may say they are about 3 inches long, of a dirty yellow colour with brown specks; a small depressed shell is on the hinder part of the back about $\frac{1}{4}$ inch long. I have never found them out of the soil. *M. Webster, Kelcy Park Gardens, Beckenham.*

GRAPE JUDGING.—In the *Gardeners' Chronicle* for September 11, p. 186, there appeared a long letter from "Ayrshire Lad" upon the subject of judging horticultural exhibits. There are many interested in this matter, and anxious to find a better method than now obtains in the distribution of awards at flower shows. There are far too many systems employed, each individual having one of his own, thus providing scope for faddists and cranks, of which not a few receive appointment as judges. If one proper system could be adopted, there would be less wrangling among judges, and fewer disappointments among exhibitors. I agree in the main with the principle advocated by "Ayrshire Lad," and in the positions of merit assigned to varieties in the two classes, and especially with the fixed ratio between cultural and natural merits. I trust "Ayrshire Lad" has not forgotten the promise he made to

deal with mixed collections of fruit, which is even more important, so far as it affects the relative value of the different kinds. *One Interested.* [Is not the *Code of Rules for Judging*, issued by the Royal Horticultural Society, a great help? Ed.]

APERA ARUNDINACEA.—I was glad to see a figure and short note on this elegant plant on p. 282—3 of the *Gardeners' Chronicle*. Of all the smaller-growing perennial grasses, I know of none so distinct and graceful as is this New Zealand species. It is, however, by no means a new introduction to our gardens, as might be inferred from the note on p. 282. I first saw this plant at Newry at least ten, but more likely fifteen years ago, and obtained it from Mr. T. Smith, who has long had it in cultivation at Daisy Hill and elsewhere. The prettiest phase of the plant is shown when its purplish spikes or inflorescence first emerge from amongst their sheathing-leaves, when they curve gracefully downwards like the tail-feathers of a Colchican pheasant; and in many Irish gardens "*Pheasant's-tail Grass*" is now its usual name or *sobriquet*. Near walls, or rockery-stones, or natural rocks, it is quite at home, and its foliage assumes a rich fox-brown colour in late autumn and winter that renders it very attractive, apart from its inflorescences, which are very beautiful for indoor-glasses and vases if cut soon after they fully emerge, i.e., in the Pheasant's-tail phase of their beauty. The plant as well established seeds so freely, that but little difference is experienced in securing a good stock. I have some recollection of being told that this graceful *Apera* had been originally introduced by Herr Max Leichtlin; but I know Mr. Smith of Newry introduced it to Irish gardens long before it appeared in England, and it is curious to find that no mention of such an exquisite garden-plant is mentioned in the *Dictionary of Horticulture* (Nicholson), and other works even more modern. As a distinctly beautiful garden-plant in all its phases, *Apera arundinacea* cannot be too well or too widely known and utilised as a unique and desirable garden-plant. *P. W. Burbidge.*

BOOK NOTICE.

THE USEFUL FIBRE PLANTS OF THE WORLD.

MR. CHARLES RICHARDS DODGE, the "Special Agent in charge of Fibre Investigations," in connection with the United States Department of Agriculture, is to be congratulated upon the production of a most useful contribution to a subject that has occupied an immense amount of attention for several years past, namely, the utilisation and development of vegetable-fibres.

As a proof of the wide interest of the subject, we need only refer to the numerous references to fibre-plants that have been made from time to time in the *Kew Bulletin*; and to the fact that the Society of Arts in 1895 considered it of sufficient commercial importance upon which to base a course of Cantor lectures, which it will be remembered was given by Dr. Morris. Consider in the large trade that is now done in vegetable-fibres, whether for textile purposes, rope and cordage-making, or as brush materials, it is well that such a compilation as the one before us should have been produced, and it is also well that the work should have been undertaken by such a competent authority as Mr. Dodge.

As a proof of the thoroughness of the work, and as an indication that its preparation has not been hurried, the author tells us in his preface that the foundation of it was laid a little over twenty years ago, namely, at the Philadelphia International Exhibition of 1876, where raw fibres, textiles and textile manufactures were largely represented; but the information has been brought down to the present time by continued study, observation and investigation, with the result that as many as 1018 species of fibrous plants are enumerated, "the more important of which are fully described and treated from the botanical, agricultural, and industrial standpoints; being described or referred to under their scientific, commercial, common and native names (as far as the latter could be obtained and properly verified); the kind of fibre produced, the part of the plant producing it, as well as the position of the species in the vegetable kingdom."

It is in the alphabetical arrangement of the book

throughout that the utility of such a work will be found, as it appeals not only to the scientific man, but to the commercial man equally. All the names, whether scientific, commercial, or native, are printed in clarendon type, but the descriptions are all given under their scientific names, to which reference is made from the common name, as for instance, "*Assai Palm of Pava* (Braz.), *Euterpe oleracea*," and by turning up for "*Euterpe oleracea*" we find not only the full account of the Palm, but also a figure of the tree, for the book is well illustrated throughout.

Though the references to well-known fibres are very complete, and consequently of great use to those interested in fibres from the commercial aspect, it is perhaps, in the less-known plants that the book will be of extreme value to the scientific student. We take the following paragraph haphazard as an illustration of this:—"*Asimina triloba*. The Papaw of Temperate United States. Exogen. Anonaceae. A tree. Abounds in eastern middle United States from Michigan to the Gulf. Fibre. Derived from the inner bark, but now scarcely employed for any purpose. "The inner bark stripped from the branches in the early spring is still used by fishermen on the Ohio and other western rivers for stringing fish; formerly employed in making fish-nets" (C.S. Sargent). Dr. Havard states that the inner bark has a tough, fibrous texture, and in former times was commonly used by the Indians for withes, strigs, nets, &c. Savorgnan states that the bast from the inner bark of young Sprouts is very strong and lustrous.

Besides the alphabetical descriptive catalogue of fibres which, of course, occupies the main portion of the book, there is also a most useful introduction, classified under the following heads:—Definition of Fibres; the Ancient Uses of Fibres; Principal Fibre used commercially in the United States, and their Imports; Economic Investigation; Chemical Investigation; Micro-chemical Study of Fibres; the Classification of Fibres, based on Uses and Structure.

In conclusion, we can only say that we are sure that there will be a very large demand for the book, and as we understand that only a limited edition has been issued, we hope Mr. Dodge will at once proceed with the preparation of another edition; and repeat our thanks for what he has already given us.

Obituary.

E. J. BAILLIE.—Mr. E. J. Baillie, F.L.S., died at his residence, Woodbine, Upton, shortly after 10 o'clock on the 18th inst. Mr. Baillie was only forty-six years of age, and he leaves a widow and a family of ten to mourn their loss. Rather more than thirty years ago he entered the firm of Messrs. F. and A. Dickson & Sons, seed merchants and nurserymen, Eastgate Street, Chester, and his business career was most successful. He commenced as a junior in the correspondence department, the charge of the department eventually falling to his care and supervision. He was next appointed cashier and confidential adviser of the firm, and afterwards became a partner, and subsequently managing partner of the business. When the two firms of Dicksons were amalgamated, Mr. Baillie became deputy chairman and a managing director of Dicksons Limited. Since the death of Mr. Alfred Dickson he had been more intimately connected with the extensive nursery department.

His labours on behalf of the Grosvenor Museum will never be forgotten. For some years he had acted as honorary secretary and treasurer to the managing body of that institution. He was a fellow of the Linnean Society, and the members of the Chester Society of Natural Science were indebted to him on several occasions for enjoyable rambles when he conducted them, through the Nurseries and elsewhere in the neighbourhood. For his services to the cause of natural science he was awarded the Kingsley Memorial Medal. He was one of the prime movers in the formation of the Chester Paxton Society, and, a true lover of art, he practically initiated the Chester Guild of Arts and Crafts. Mr. Baillie was ever striving to popularise

art, and the citizens have him very largely to thank for the display of pictures from time to time at the Museum, and also for the art exhibition opened some months ago by the Duke of Westminster.

A personal friend and enthusiastic disciple of John Ruskin, he had been for some years, and indeed was at the time of his death president of the Ruskin Society, Liverpool. It was through his instrumentality that the exhibits at the recent conversations in the Museum were enhanced by several fine specimens of Ruskin's artistic work. Deceased was a clever artist, having a remarkable facility for transferring faces and striking bits of scenery to paper; while another accomplishment in which he shone was that of shorthand.

A Fellow of the Royal Horticultural Society, deceased on several occasions lectured before this body; while articles on fruit culture frequently appeared from his prolific pen in various publications. As is well known, Mr. Baillie was an enthusiastic vegetarian, being one of the Vice-Presidents of the Vegetarian Society. He took an active part in the Vegetarian Conference in Chester two years ago, and it is a melancholy coincidence that the Society celebrated its Jubilee in Manchester on the very day of his death.

Mr. Baillie had strong spiritualistic leanings, and he was one of the few members in this district of the Psychical Research Society. Deceased never interested himself in political matters. In religion he was a Presbyterian.

MR. RAND.—We regret to hear of the decease of Mr. Rand of Para, a gentleman much attached to the study of Orchids, and who has been the means of introducing many species to this country.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 26.—An ordinary fortnightly meeting of the Society's committees took place on Tuesday last in the Drill Hall, James Street, Westminster. It was certainly a rather day among the meetings of the year, and the attendance was greater than on any other occasion this season. V. M. H. (Victoria Medals of Honour) attracted many persons, including those to be honoured, and many who were not. Of the sixty selected gentlemen, more than two thirds were present to receive the symbol of distinction from the hand of Sir Trevor Lawrence, Bart., the President of the Society, who distributed the medals in the presence of a very large company—a larger company, indeed, than accommodation had been provided for. There was much enthusiasm about the proceedings, and all of the medallists appeared to appreciate the honour conferred upon them. There was much speaking at the luncheon in the "Hotel Windsor" (elsewhere reported); but at the more public proceedings in the Drill Hall, there was no speech made by or on the behalf of the recipients. As there were so many present this would have been inconvenient—but, at the same time, something of the kind seemed called for. The display in the hall was one fitting the occasion, and exceedingly bright it was. Chrysanthemums in groups, and as cut flowers, were the most prominent feature. Mr. Elwes' Nerines were pretty, and obtained several awards. There were many pretty Orchids, and numerous miscellaneous plants. Fruits were plentiful, and included large collections of Apples and Pears. A new Melon and a new Grape obtained awards. Vegetables in several exhibits were good, and two awards were made to Turnips.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. Owen Thomas, John Laing, Chas. T. Drury, H. B. May, R. Dean, E. Molyneux, Geo. Stevens, Geo. Egleheart, Jas. Huxson, J. Fraser, J. D. Pawle, Chas. Jeffries, H. J. Cutbush, Jas. Walker, C. E. Pearson, Chas. E. Shea, Geo. Gordon, Chas. Black, H. Turner, Geo. Paul, J. T. Bennett-Poë, H. Selfe Leonard, Geo. Nicholson, and D. B. Crane.

H. J. Elwes, Esq., Colebourne, Andoverford, Gloucestershire, exhibited a group of seedling Nerines in flower. The varieties in colour and shade were most attractive. The following were selected for Awards of Merit: Lady Mary Shelley, light pink; Lady Dorington, light pink, with deep rose line running through the centre of the petals; Lady Lucy Hicks Beach, deep crimson; Lady Bromley, a curious association of red and purple, the purple line running through the centre of petals; Lady Llewellyn, dark carmine; Lady Flouke, pale rose; Countess Bathurst, white, with a line of deep rose; and Lady Lawrence, reddish-salmon. Several species and hybrids were also shown by Mr. Elwes, and a Silver Flora Medal was awarded the group.

Messrs. Jno. Laing & Sons, Forest Hill, London, S.E., showed an excellent group of plants of a miscellaneous character, inclusive of species with decorative foliage, and a few flowering plants (Silver Flora Medal).

Messrs. Wm. Paul & Son, Waltham Cross Nurseries, Herts, made yet another exhibit of cut Roses, really wonderful in variety and attractiveness for the last week in October. The collection was distinguished by the Award of a Silver-gilt Banksian Medal.

A group of half-a-dozen plants of *Gesnera amabilis* in flower, from Mr. F. Blair, gr. to the Duke of Sutherland, Trentham, Staffordshire, attracted some attention, and the plants uncommonly well portrayed its exceptionally free-flowering habit. The flowers are white, shaded outside with cream.

Mr. T. S. Wane, Hale Farm Nurseries, Tottenham, had Carnations submitted for Certificates; and Miss Emmett, 6, St. Charles Square, North Kensington, exhibited some models of flowers in a glass case. The exceedingly clever manner in which Nature was imitated, and incidentally the taste in which they were grouped, were conspicuous to everyone present. The species mimicked were *Vitis quinquefolia*, *Habenaria fusca*, *Carpinus americana*, *Solidago canadensis*, and *Disa grandiflora* (Silver Medal).

A most attractive group of *Adiantum*, *Ferns*, and *Begonias*, was staged by Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton. The *Adiantums* included some beautiful plants of *A. Farleyense*, and the *Begonias* were *Gloire de Lorraine* (Silver Flora Medal).

Messrs. W. Cutbush & Son, Highgate Nurseries, London, N., had a very pretty group of plants arranged upon the floor near the door. The background contained some large-flowered *Chrysanthemums*, fine *Palms*, and *Dracenas*; and the forefront some beautifully-flowered plants of *Begonia Gloire de Lorraine*, winter-flowering *Carnations*, *Ericas*, and a few berried plants (Silver Banksian Medal).

Flowers of Sunflower *Lockinge Favourite* were shown by Mr. W. Fyfe, gr. to Lord Wantage, Lockinge Park, Wantage. It is an exceptionally free-flowering variety, in habit between the miniature and giant strains.

Messrs. J. A. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, obtained a First-class Certificate for a new species of *Marattia* M. Burkel. The tripinnatifid fronds are glossy polished green; and the pinnate rachis light green in colour, and of much substance, causing each frond to droop. The frond as seen was about twenty-one inches long, with eight almost opposite frondlets, seven inches long, each bearing about nine pairs of pinnae with lanceolate slightly toothed segments.

CHRYSANTHEMUMS.

The leading group came from Mr. W. Wells, Earlswood, Redhill, who, departing from the usual custom of arranging the plants in a semicircular form, had his at varying levels, and introduced some boards of blooms in the foreground. Among the leading varieties were G. J. Warren a pale yellow sport from Madame Carnot, which it resembles in all respects but colour, and it is likely to be as valuable as an exhibition variety (Award of Merit). *Oriental Topaz*, a pale sulphur-yellow incurved, of large size, in the way of Lord Alcester; *Directeur Liebert*, a refined Madame E. Audiguer; N. C. S. Jubilee, a fine incurved Japanese, in colour delicate pink, with a silver reverse; *Australie*, Mr. H. Gardener, a rose-tinted Japanese *Anemone* of good properties, but scarcely sufficiently distinct; Dorothy Seward, Madame G. Bruant, M. E. André, William Seward, &c. (Silver-gilt Banksian Medal).

A bold and striking group came from Messrs. J. Veitch & Sons, Ltd., which included capital illustrations of William Fyfe, Madame Gustave Henry, Simplicity, Pride of Madford (very fine), Mrs. C. Black, Mrs. S. C. Probyn (very fine), M. Chénod de Leché, Mrs. G. W. Palmer, Dorothy Seward, Modeste, the new yellow Louis Bochner, &c.

Mr. T. S. Wane, Hale Farm Nurseries, Tottenham, also staged a grand group, alternated with other plants. He had Madame Gustave Henry, Western King, Simplicity, Madame Xavier Ray Joveris, Rena Dula (incurved), Glory of the Pacific, Madame E. Roger, Modestum, Duke of Wellington, &c. (Silver Banksian Medal).

In the way of collections of cut flowers, Mr. W. J. Godfrey, nurseryman, Exmouth, took the lead, filling one side of a table with a large number of finely-developed flowers, novelties greatly preponderating. Awards of Merit were made to Lady Ridgway, the large, incurving, broad-petalled flowers having a soft lilac-purple colouring on the surface, with an amber reverse: this is likely to prove one of the very finest varieties of the season; Madame Philippe Revlere, a large, full, broad-petalled white Japanese, of fine character; Ella Curtis, a large, full, and striking flower, of the type of *Boule d'Or*, but a little paler in colour; Simplicity, a pure white Japanese, of good shape, and long, drooping basal florets; Lady Byron, pure white, a large-spread, drooping flower, of fine substance; Modestum, a handsome large yellow flower, of fine form; and Sunstone, pale yellow, very pleasing in tint, and high'y promising (Silver-gilt Floral Medal).

Messrs. H. Cannell & Sons, Swanley, in a collection of cut *Chrysanthemums*, had Lady Hanhan, a sport from Charles Davis, and like it, will be certain to prove a valuable exhibition flower, though inclining to vary; its true, or rather best character should be ruby-pink, with a large, bright golden centre (Award of Merit). Robert Powell, a large, full, incurved Japanese, in the way of E. Molyneux, pale chestnut, with amber reverse (Award of Merit); N. C. S. Jubilee, an incurved Japanese of a soft pinkish-lilac tint, very pleasing (Award of Merit). Also several bunches of bright and pleasing single varieties were shown, the most promising being King of Slam, crimson; Rosebank, pale rose-pink; Willie Chapman, blue-pink; and Blanche Chapman, soft pink (Silver Banksian Medal).

Mr. N. Molyneux, The Gardens, Rookesbury Park, Ware-

ham, Hants, had blooms of Mrs. N. Molyneux, a large, solid, white incurved variety, like Queen of England, as shown, but probably likely to prove its superior.

Mr. R. Owen, nurseryman, Maidenhead, had Lady Phillips, like a pale Madame E. Audiguer; Soleil d'Octobre, pale yellow, a flower of good shape; Comtesse de Boulaucourt, deep yellow; Mrs. Sarah Owen, an incurved, in the way of R. Bahuant, bronze, tipped with orange, &c.

Mr. George Wythes, gr. to Earl Percy, Slon House, Isleworth, set up several bunches of finely-developed blooms, rising out of a bed of dwarf Ferns, with Palms at the back; this was a charming contribution to the meeting (Silver Banksian Medal).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), H. Ballantine, W. H. White, F. C. Jacomb, F. J. Thorne, T. W. Bond, W. H. Young, E. Ashworth, H. J. Chapman, H. Williams, J. Douglas, S. Courtauld, De B. Crawshaw, H. M. Pollett, and A. H. Smees.

At this meeting one of the finest shows of Orchids of the season was made, many of the exhibitors staging very important groups.

Messrs. J. A. Veitch & Sons, Ltd., Royal Exotic Nursery, King's Road, Chelsea, had a splendid group extending a considerable distance down one side of the central staging, which secured the Award of a Silver-gilt Flora Medal. Among the many fine hybrids shown in this group were *Cattleya* × *Olivia* (intermediate, Trianel?), a charming delicately tinted flower of an uniform peach-blossom hue (Award of Merit); and *Cattleya* × *Melpomene* (Mendel?), another pretty light coloured hybrid, with sepals and petals light-rose; lip white tinged with pink, and with a light yellow centre (Award of Merit). Another singular novelty was *Phalo-Calanthe* × *Insuperata* (P. grandifolius?), C. Masuca?) with a spike of flowers with ovate-acuminate sepals and petals, and broad, flat labellum, the whole coloured rosy-mauve in several shades. The plant was distinctly intermediate between the two parents, but the flowers approached in form and colour much more closely to *Calanthe Masuca*. Prominent in the group were the showy and useful hybrids, viz., *Laelio-Cattleya* × *Lady Rothschild*, L.-C. × *Statteriana*, and L.-C. × *Decia*; L.-C. × *Pallas* and its variety *superba*, L.-C. *Tiresias*, L.-C. × *Ino*, L.-C. × *Pleandria*, and L.-C. × *Baroness Schroder* (L. Jongheana?), C. Trianel?), the warm rose-tinted flowers of which constitute it one of the prettiest of its class. Of the hybrid *Cattleyas* C. × *Wendlandiana* and C. × *Mantini* were very fine, and richly coloured; and in the group was a large number of hybrid *Cypripediums*, C. × *Loosanum* varieties, C. × *Arhurianum*, C. × *cananthum* superbum, and others being represented by large specimens, bearing many flowers. Also remarkable in the group were the new *Dendrobium taurinum* amboinense; *D. stratiotes*, *D. Desarel*, *Epidendrum Wallisi* and its singular hybrid E. × *Wallisi-ciliare*; fine plants of *Cattleya maxima* a number of varieties of *C. labiata* which were very effective grouped together in the centre; the elegant *Cyper-orchis elegans*; the pretty white *Calogyne Veitchii*, *Vanda Sanderiana*, fine examples of *Cattleya Dowiana aurea*, and many other showy species.

R. I. Measures, Esq., Cambridge Lodge, Cambeswell (gr. Mr. H. J. Chapman) staged a very pretty group which secured a Silver Flora Medal. It consisted of twenty-five fine and distinct varieties of *Cattleya labiata*, the most remarkable of which were the handsome, white C. l. "R. I. Measures," and the uniform light rose hue C. l. *Ilacina*. The most remarkable new plant in the group was *Laelia purpurata* Mrs. R. I. Measures, a very handsome and distinct form with bluish-white sepals and petals, the latter being distinctly veined with close lines of rose-purple colour over the greater part of their surface. The lip was white at the base, striped with fine purple lines, the front dark purple (Award of Merit). Also in the group was a fine specimen of *Oncidium ornithorhynchum* album, with seventeen spikes; some good *Cattleya Dowiana*, *Dendrobium aureum*, *Cattleya Bowringiana* *Ilacina*, hybrid *Cypripedium*, &c.

WALTER C. WALKER, Esq., Percy Lodge, Winchmore Hill (gr., Mr. Geo. Cragg), was awarded a Silver Banksian Medal for a pretty group of *Cattleya labiata*, together with good examples of *Oncidium Forbesii*, *O. pretextum*, *Cattleya Bowringiana*, a fine form of *Odontoglossum crispum*, with seventeen flowers on the spike; *O. Madresae*, &c.

A Silver Banksian Medal was awarded to Mrs. WINOFIELD, Amphill House, Bedfordshire (gr., Mr. W. J. Empson), for a good group of well-grown specimens of *Cattleya labiata*, with which were arranged *Oncidium varicosum* and other showy Orchids.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr., Mr. W. H. White), showed a fine plant of *Laelia Perrini* alba, Burford variety; a white form having a pale pink front to the lip as in L. P. nivea (Cultural Commendation). FRANK HARDY, Esq., Tyntesfield, Abington-on-Mersey (gr., Mr. T. Stafford), showed *Laelia pumila* albens, a very fine white variety, with distinct purple-crimson markings on the front of the lip (Award of Merit); and *Cattleya Hardyana* magnifica, one of the finest and richest in colour of any of the varieties of this variable natural hybrid (Award of Merit). Mr. HARDY also showed three fine *Cattleya aurea*, a *Laelio-Cattleya* × *Tydesa*, and a pretty, dark-veined *Cypripedium Charlesworthii*.

R. BROOMAN WHITE, Esq., Arddarroch, Gaelochhead, Dumfrieshire, showed *Odontoglossum crispum* "Sunlight," a very fine variety with large white flowers, slightly tinged with rose, and bearing some large blotches of red-

dish-brown, the petals also having numerous small purple spots (Award of Merit).

C. K. WILD, Esq., Bramcote, Weybridge (gr., Mr. R. Pallant), showed *Cattleya Bowringiana* "Wild's variety," bearing a very fine inflorescence of the largest and brightest coloured flowers of any of the species yet shown (Award of Merit and a Cultural Commendation).

ELIJAH ASHWORTH, Esq., Harefield Hall, Wilmslow, Cheshire (gr., Mr. Holbrook), showed two plants of *Cypripedium* × *Haynald-Chamberlainii* (*Chamberlainianum* × *Haynaldianum*), the first cross of *C. Chamberlainianum* that has appeared. The upper sepals were white, green at the base, and bearing some fine purple lines; petals green marked with purple, lip rose-purple margined with greenish-yellow (Award of Merit); and *C. × Arthurianum*, var. *E. Ashworth*, a fine flower with distinct dark purplish-brown markings.

Messrs. W. L. LEWIS & Co., Southgate, showed a small group of a good type of *Laelia pumila*, the best of which was *L. pumila* magnifica, a very large and showy flower (Award of Merit); also *Laelia longipes* (Botanical Certificate), a plant known in gardens as *L. Lucasiana*.

Messrs. HUGH LOW & Co., Clapton, showed a group of fine *Vanda corulea*, with which were arranged *Cypripedium* × *Fascinator*, *C. Lecanum superbum*, *C. L. virescens*, *C. Arthurianum*, and other showy Orchids.

Messrs. F. SANDER & Co., St. Albans, staged a group in which were good varieties of *Cattleya labiata*, *C. aurea*, *Cypripedium insignis* Sanders, *C. insignis montanum* varieties, *Miltonia spectabilis* Morelliana, *M. vexillaria*, *Laelia monophylla*, *L. pumila*, *Sophronitis grandiflora*, *Vanda corulea*, *Oncidium ornithorrhynchum*, *O. tigrinum* with variegated foliage; *O. Krameri*, and *Habenaria carnea*.

Messrs. B. S. WILLIAMS & SONS, Holloway, showed a group consisting of *Vanda tricolor insignis*, *Zygopetalum Klabechorum*, varieties of *Cattleya labiata* and *C. Bowringiana*, *Laelia Perrini*, *Cypripedium* × *Barteti*, *C. × Arthurianum*, *C. × giganteum*, *C. × Pitecherianum*, Williams' var., *C. insignis Wallacei*, *Dendrobium bigibbum*, *Oncidium crispum*, and *O. Phalanopsis*.

Mrs. BRIGGS-BURY, Bank House, Accrington, showed *Cattleya* × *Adonis*, said to be the result of a cross between *C. Mossiae*, and *C. Warscewiczii*. The flower resembled a fine light-coloured form of *C. Warscewiczii*, but the yellow colour usually seen in that species was almost entirely absent, it being replaced by cream white; the front lobe of the lip was marbled with clear rose-colour. Mrs. Briggs-Bury also showed *Cattleya Warscewiczii splendens*, with a very fine crimped labellum; *Cypripedium Arthurianum pulchellum*, Bank House variety; and the yellow *C. insignis* Ballie.

J. BRADSHAW, Esq., The Grange, Southgate, N., showed some remarkable varieties of *Cattleya labiata*, among which were *C. l. Ruby*, a very finely coloured dark form; *C. l. glauca*, having a peculiar slate-blue tint; and *C. l. Etona*, pure white, with bright purple front to the lip; also *Cypripedium purpuratum*.

Captain THOS. A. JULIAN, Woodside, Plymouth, showed two fine varieties of *Dendrobium Phalanopsis*, the one a white variety with a pink-hued lip, similar to *D. P. Rothschildiana* (*Gard. Chron.*, Dec. 3, 1891, p. 668); and the other the light rose-tinted *D. P. delicatum*.

THOS. STATTIE, Esq., Staud + all, Whitefield, Manchester (gr., Mr. R. Johnson), again showed the distinct *Cattleya aurea* var. *Johnsoni*, for which he obtained a First-class Certificate on Aug. 11, 1885—a good evidence of cultural skill, and a proof that Orchids need not necessarily degenerate if properly tended.

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), showed *Laelia-Cattleya* × *Diarmid* (*L. Perrini* × *L. C. elegans* Turner); *L. C. × Lady Rothschild* (*L. Perrini* × *C. Warscewiczii*); *L. C. × Homère* (*L. Perrini* × *C. Percivaliana*); and *Cattleya Bowringiana*, Ingram's var.

ROINALD YOUNG, Esq., Fringilla, Linnet Lane, Sefton Park, Liverpool (gr., Mr. Poyntz), sent *Cattleya Dowiana* aurea, Young's var., distinguished by the distinct yellow area on the labellum; and *Cypripedium* × *Clio*.

E. HOCKLIFE, Esq., The Hall, Uppingham, Rutland (gr., Mr. Cant), showed *Cattleya* × *Hardyana* Hocklife's var., a distinct variety, the segments of which were tinged with lilac, and the yellow lines on the lip were very narrow, and displayed on a peculiar reddish-purple ground.

FRANK LLOYD, Esq., Combe House, Croydon, showed *Cattleya labiata* with abnormal flowers.

T. W. SWINBURNE, Esq., Comdean Hall, Winchcombe, showed *Odontoglossum grande*, in which two flowers had joined.

Frau IDA BRANDT, Riesbach, Zurich (gr., Mr. Schlecht), sent *Miltonia spectabilis* rosea, *M. S. Morelliana* illustris, and *Cattleya Bowringiana*; and G. W. LAW-SCHOFIELD, Esq., New-Hall-Hey, Rawtenstall (gr., Mr. Shill), sent *Laelia purpurata* Annie Louise, with rose-veined petals, resembling *L. p. Mrs. R. L. Measures*, but the markings were not so clearly defined.

Fruit Committee.

Present: Philip Crowley, Esq., chairman; and Messrs. T. F. Rivers, Geo. Bunyard, Jos. Cheal, W. Crump, A. H. Pearson, A. F. Barron, W. J. Empson, Alex. Dean, Jas. H. Veitch, W. Farr, Geo. Wythes, H. Balderson, F. Q. Lane, Jas. Smith, J. Willard, Robt. Fife, and J. Wright.

A number of dishes of both Pears and Apples were staged in the Veitchian competition for flavour, and the result was that 1st prize for Apples went to Cox's Orange Pippin, from Mr. HERRIN, gr. at Droghda. The fruit was from a bush tree on the Paradise Stock. 2nd, American Mother, from Mr. Geo. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, Maidstone. The best Pear was that excellent variety,

Doyenné du Comice, from Col. BRYMER, M.P., Ilington House, Dorchester. The fruits were obtained from a tree on east wall, stock the Quince, and in a light loamy soil. 2nd, Emile d'Heyst, from Mr. WOODWARD.

A new white Grape was shown by Mr. T. Bradshaw, gr. to the Marquis of LANSDOWNE, Hillsborough Castle, co. Down, Ireland. It is said to be the result of a cross between Muscat of Alexandria, and White Gros Colman, the latter being the seed parent. Three bunches were shown, the largest of which had been grown in a late house and was very unripe. The two from an early house also differed in flavour from each other. The best was of tolerably good flavour, pleasant to the palate, and pretty in appearance. In habit of bunch, the character of Gros Colman is distinctly evident. If the variety proves to be a good late keeping Grape, it will be valuable.

A seedling Melon, out of Beauty of Syon × Syon House, from Mr. GEO. WYTHES, Syon House, Brentford, obtained an Award of Merit. It is named Excelsior, has a straw-coloured netted exterior, salmon-coloured flesh, and good flavour, especially for the season.

Mr. A. OUTRAM, 7, Doria Road, Fulham, exhibited a dish of capital fruits of Royal Dutch Medlar; and Mr. J. Crook, gr. to W. H. EVANS, Esq., Forde Abbey, Chard, showed a dish of Cox's Late Red Plum, and a dish of Tomatos from the open.

Awards of Merit were recommended to Turnips Model White, and Golden Ball both from Messrs. DOBBIE & Co., Rothsay and Orplington, Kent. Both of these types are excellent in every respect. Messrs. DOBBIE also showed plants of their selected Parsley, and their Victoria Parsley, Parsnips, &c.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., staged a collection of Apples and Pears. The exhibit included about 10) dishes, and was awarded a Silver Gilt Knightian Medal.

Another collection from Messrs. J. CREAL & SONS, Lowfield Nurseries, Crawley, included about eighty dishes of fruit, most of them Apples, and about twenty-five dishes of Pears; a Silver-gilt Knightian Medal was awarded in this case also.

A Silver-gilt Knightian Medal was deservedly awarded for a collection of Grapes exhibiting very successful culture, shown by C. BAYER, Esq., Forest Hill (gr., Mr. Tayler). There were two or three bunches of the following varieties: Trobiano, Gros Colmar, Gros Maroc (exquisite), Foster's Seedling, Black Hamburg, Altwick Seedling, Mrs. Pince, and Muscat of Alexandria.

Messrs. B. CANNELL & SONS, Swanley, Kent, made a display with some excellent vegetables from their Eynford Nurseries. Capital Onions of Ailsa Craig, Improved Wroton, and Reading Improved; Cannell's Mammoth Leeks, thick, and well blanched; Cannell's First Prize and First Class Carrots of the Intermediate type; Best-of-All Beet, very fine Autumn Giant Cauliflower; and some heads of Cannell's Defence Cabbage, an exceedingly pretty well-shaped Cabbage, good hearted, in which there is little waste. About forty dishes of Potatoes, representing the choicest varieties, were also shown (Silver-gilt Knightian Medal).

Messrs. CARTER & Co., High Holborn, London, were awarded a Bronze Knightian Medal for a collection of twenty-two varieties of Beetroot.

Royal Horticultural Society's Victoria Medal of Honour.

At the invitation of the President and Council of the Royal Horticultural Society, a large proportion of the sixty gentlemen selected to receive the Victoria Medal of Honour was present at a luncheon on Tuesday, October 26, at the Horticultural Club Rooms, Hotel Windsor, Victoria Street, Westminster, prior to the distribution of the Victoria Medals in the Drill Hall. Sir TREVOR LAWRENCE, Bt., the President of the Society, occupied the chair, and he was supported by several members of the Council.

After luncheon the President gave the toast of "The Queen, and Patron of the Society," which was heartily responded to.

The President then proceeded to explain the object of that gathering. He said there was a strong desire early in the present year on the part of the Royal Horticultural Society to do something to celebrate the long reign of Her Majesty. The Queen had for many years been patron of the Society, and many members of the Royal Family were Fellows, while they would also recollect that the late Prince Consort was for some years their President. For the greater part of a century the Society had presided over and in a great measure directed the gardening interests of this country, and he thought they would agree with him, that the Queen being Patron of the Society, it was only becoming that the Society should celebrate the remarkable occasion of Her Majesty's Sixty Years' Reign. If we were to enter into the subject of the great advances made in horticulture, and in all branches of gardening, during that period, it would take up too much of their time, and, besides, those subjects had been dealt with recently by persons far abler than he was to deal with them. He would only say that those people must be blind indeed who could not see the enormous strides which gardening had made in this country during the last fifty or sixty years. He ventured to think that the great strides that had been made illustrated the fact—as a fact it undoubt-

edly was—that gardening was by no means one of the pleasures of the rich only. He remembered when he had the pleasure of representing in Parliament rather a poor part of London, Battersea and Wandsworth—being struck by the great and trouble which the people took with their window-boxes, and he was sure that as great an interest was taken in gardening by the poorer people as by the rich and wealthy. It would be an exaggeration to say that gardening was the mother of all the virtues; but at the same time, he thought they might say, with perfect truth, that there were very few pursuits and occupations with so small an admixture of the selfish as gardening.

When the question arose as to what the Royal Horticultural Society was to do to celebrate the Diamond Jubilee, need scarcely say that the fertile brain of their Secretary had a suggestion to make. He did not mean to say that the Secretary's brain was the only brain that was fertile, but the fertility of his brain produced a more sturdy plant than the fertility of other brains. He might say that it was the inspiration of the Secretary that they took into consideration the proposal of the establishment of the Victorian Medal of Horticulture.

Many projects were considered, and looked at all round, but it became perfectly clear that the Secretary's suggestion was by far the best of all that came before them, and himself as President of the Society, was instructed to Her Majesty's gracious permission to establish the Medal. They were all aware that Her Majesty scrupulously abstained from taking any prominent share in choosing the method of celebrating her Jubilee, but the Queen graciously intimating to the society her assent to their proposal, and expressing opinion that there could be no possible objection to it, being so they decided on carrying out the suggestion of the Secretary, and he, personally, was very glad they did.

He was glad to see one of their lady members present that day, and they would all feel that nothing could be more becoming when they were celebrating the Jubilee of Gracious Majesty, than that some members of her own sex were medallists. He did not think anything could be more conclusively than that gathering, that the society did wisely in adopting the suggestion of their Secretary. He saw around him men of the greatest eminence, and thanked them for their presence that day. When the question arose as to who were to be the recipients of the Medal, it was thought right that every department connected with the art and science of gardening should be represented. It was possible care was taken in the selection, and if names appeared on the list and others did not, it was understood that there were good reasons both for the selection and the exclusion. In the first place it would have been at all becoming if the Council, who had the selection of the names, should have distributed the Medal among their own members. Then there were reasons—reasons—private reasons—why certain gentlemen, who invited to become recipients, thought it their duty to do so. The result was, that the recipients of the Medal included eight botanists—he took them first, as science being things was the moving-power of the world at the present time. At the head of them they had the distinguished botanist who sat on his right (Sir Joseph Hooker) man who during a long life had done more valuable work for the science of botany than any one other man he had achieved. Then they had many collectors, and hybridists they had, representing the gardening trade, for nurserymen and men engaged in business. They had members who represented the market aspect of gardening and they had twenty-seven medallists representing professional gardeners, fifteen of whom were amateurs, and twelve professionals. Some people, perhaps, would think that proportion in that case should be reversed! Then they had one landscape gardener, and two members of the cultural press.

He could assure them that the greatest possible care was taken in the selection in every case. No the Council had made mistakes in including names some might think ought to have been omitted, and in omitting names that others would think ought to have been included; but they had done their best to secure a representative list of names.

He would here like to say that the Queen, having sanctioned the establishment of the Medal, it would be distasteful if it were used for purposes of advertising.

In conclusion, the President expressed his gratitude to those who had attended that gathering, and explained the design for the Medal was the work of a lady—Margaret Gies—who had carried out a very graceful commission in a most satisfactory way.

Sir JOSEPH HOOKER, in responding for botanists, the President and the Council for the very high honour had conferred upon him in placing his name among recipients of the Victorian Medal, among whom he could be found some whose claims to respond to the toast beyond his own. There were those present who represented three generations of horticulturists, and

had introduced more new plants than ever Kew ardens had—men in the front rank, the results of whose labours were to be seen throughout the land alike in the gardens of prince and of the peasant. However, he gladly accepted the proud position of responding. The duties performed at Kew were very various—the introduction of new and rare plants, their classification, identification, description, and illustration, and what was of more importance, the propagation of useful plants for the benefit of mankind. But what good would all this be without practical horticulture? The gardens of Kew would be practically wasted, and it behoved botanists to consider how greatly they were indebted to horticulturists for some of the most precious possessions of the botanical world. Therefore he would impress it upon them that botany and horticulture—practical horticulture—must go hand in hand. So long as that was the case, both botany and horticulture would prosper.

Dean HOLK also responded. At the outset he remarked that if they were doing honour to Her Majesty, the one lady member who was present (Miss Jekyll) was certainly the "Queen of Spades!" He went on to say that in associating his name on that occasion, and in such company, they had greatly added to the enjoyment of a day which he should always regard as one of the brightest of a long and happy life, so long, indeed, that he thought he could claim the title he coveted in the great University of Cambridge, next to that of Senior Wrangler, and style himself Senior Medalist; and a life so happy because it had been spent largely in scenes which he loved most, and with men like themselves, whose tastes and habits were in such complete accord with his own. If there was such a thing as righteous pride, and if it was justifiable to put a little "side" on, he thought they had a right to wear it that day, and he was not sure that they should not be permitted to assume the demeanour of that gentleman whom Theodore Hook saw swaggering along one day and who was asked, "Sir, are you anybody in particular?" For himself, he had been for some days in training and preparation for this supreme event. On Thursday it was his privilege to entertain Her Royal Highness Princess Christian at the Deanery, and on Saturday it was his privilege to attend the Prince of Wales as Grand Chaplain, and now to-day he had the distinguished privilege of paying honour to two queens—the Queen of Flowers—the Rose—whom gardeners loved, and the Queen of England, whom all England revered. But it was not pride which was uppermost in his thoughts that day. On the contrary, it was a very humble thankfulness that they had been permitted to add to the purest of human pleasures, and that they had been allowed to see the fruition of their success! It was impossible for an old man in a retrospect of the years that had gone, not to have sweet solace in the thought that he had been permitted in some degree to help in brightening the lives of others by means of a healthful and harmless occupation among things pleasant to the eye, and good for food. The Society of which Sir Trevor Lawrence was President, with its Council and its unwearied secretary, had done excellent work for a long time past in many places, by promoting the science of horticulture; and although, of course, he was prejudiced on the present occasion, he ventured to say that the institution of the Victorian Medal would prove a grand encouragement in quickening the ambition and energies of those men who would excel hereafter in botanical science and in horticultural skill.

Mr. SHERRWOOD, who was next called upon, said after the excellent speeches to which they had listened with such pleasure, they would forgive him for being brief. He would not dwell upon the marked improvement in the seed and nursery trade that had taken place during the last sixty years, as during the last few weeks Mr. BUNYARD and Mr. BURTON had written exhaustive papers on those subjects. He would only say that the Royal Horticultural Society would be heartily thanked for all it had done—a work which would be recognised by all the gentlemen who had been brought together that day. None of them would easily forget the bestowal of the Jubilee Medals. He was glad the President referred to the Council in this connection, because there were many who thought that the members of the Council should certainly have received some recognition. He could only hope that some such recognition would follow.

Mr. HUDSON (gardener to Baron Rothschild) was the last gentleman to respond, and he did so on behalf of gardeners in general. He said they ought to congratulate themselves that they steered clear of the controversies which they saw going on in other professions. He had been identified with the Royal Horticultural Society for close upon thirty years, and he had always endeavoured to carry out three principles—to serve his employer to the best of his ability, to further the work they had at heart, and to assist those of the craft who needed assistance.

BARON SCHRODER then rose, and said that he had been asked to propose the "Health of the President and the Council of the Royal Horticultural Society," and he

considered it a great honour, among so many distinguished gentlemen, to have been selected for that duty. He felt that he could hardly do justice to the toast, as he was no speaker, but he thought that, as an old and retired member of the Council, he had had a great deal of experience of the troubles and anxieties connected with the office of President of that great Society. He therefore felt that all honour was due to those gentlemen for the way in which they had brought the Society to its present splendid position. He well remembered when he was called to the Council. At that time they were located at South Kensington where they had a large and lofty conservatory, but a wretched Council Chamber. He also remembered that at that time the Council was very much divided. Some were for continuing in the old groove, and seeing the old Society gradually die out; but there were others, and at their head was Sir Trevor Lawrence, who believed they would be doing right in breaking away from the old traditions. That was a grave step to take. They had many consultations together. They had no money, they had hardly any friends, and the Society was going from bad to worse; still, they had a President, and that President helped them. In the midst of their troubles, and when they were considering whether they should leave South Kensington or not, they were turned out! That was the darkest hour for their Society. They could not pay their rent, they had no home in London, and very few friends, but their President stuck to them. He was ready for the occasion, and under his wise and careful management the Society had gradually prospered, and it was now in a position which no other [horticultural] society in the world could boast of.

Now they were at the Drill Hall and at 117, Victoria St. They were wise to go there because they had nowhere else to go! He still held his old opinion that the Society ought to have a home of its own, and he hoped that some day such would be the case. He heartily congratulated the President on his wonderful knack in finding so good a Secretary as the Rev. Mr. WILKS, and he felt sure that under the guidance of such officers as they possessed the Society would flourish.

THE PRESIDENT, in response, said that Baron Schroder had referred to him in far too flattering terms. He well remembered the days about which the Baron had spoken, and he was bound to say that it was owing, in a large measure, to the Baron's hearty support that they were enabled to carry out the change of policy to which reference had been made. It was the duty of the Royal Horticultural Society to stick to horticulture, and from the moment the Council took up a position of determination to follow that course, it had not looked back. It was impossible for him, in responding to the toast, to give adequate utterance to the feeling of gratitude entertained by members of the Council towards the amateur and professional gardeners of the country for their support, as evidenced by the splendid collection of plants brought together in the Drill Hall that day. The President then quoted the following statement from the *Journal* of the Society:—"The Royal Horticultural Society has spent during the ninety-two years of its existence no less than £400,000. That it has made mistakes and wasted money its best friends will not deny; but it may confidently be asserted that it has done and is doing a good work which no other society could do—a good work of value to the community; and the introductions of the Society and the lessons it has taught have embellished the land, and smile on the visitor from every park and garden in the kingdom." He thought that fairly represented the work of the Society, which, he believed, had the cordial support of the horticulturists of this kingdom.

THE DISTRIBUTION OF MEDALS.

The company then adjourned to the Drill Hall, where a large number of persons had assembled to witness the interesting ceremony of presenting the Medals. The President made a few opening remarks, practically going over the ground he covered at the luncheon; and he called upon the Secretary, the Rev. Mr. Wilks, to read out the names of the recipients.

The medalists present were the following: Miss Jekyll, Messrs. J. G. Baker, F.R.S., Prof. Bayley Balfour, F.R.S., (Edinburgh), A. F. Barron (Chislewick), E. J. Beale, W. Boxall, W. Bull, Geo. Bunyard, F. W. Burbidge, M.A., W. Crump (Madresfield Court Gardens), R. Dean (Ealing), G. Dickson (Chester), Rev. H. H. D'Ombraun, C. T. Drury, H. J. Elwes, F.R.S., Geo. Gordon, Jno. Heal (Messrs. Jas. Veitch & Sons), Rev. Geo. Henslow, Dean Hole (Rochester), Sir Joseph Dalton Hooker, F.R.S., Rev. F. D. Horner, Jas. Hudson (Gunnersbury House Gardens), Peter Kay, John Laing, H. E. Milner, E. Molyneux, Geo. Monro, F. W. Moore (Glasnevin), Dr. Morris (Kew), Geo. Nicholson (Kew), Jas. O'Brien, G. Paul, T. F. Rivers, Baron Sir Henry Schroder, Jno. Seden, N. N. Sherwood, J. Smith (Mentmore), Martin H. Smith, W. Speed (Penryn), Arthur Sutton, Owen Thomas, H. Turner, G. F. Wilson, Jno. Wright, and Geo. Wythes.

Those not present were Miss Wilmott, Messrs. Peter Barr, Malcolm Dunn, Rev. Canon Ellacombe, Prof. Michael Foster, J. Fraser (Woodford), H. Herbet, C. Maries, Jas. McIndoe, W. Paul, the Hon. Walter Rothschild, F. Sander, W. Thompson, Ipswich; David Thomson (late of Drumlanrig), and Rev. C. Wolley Dod.

SOCIÉTÉ MYCOLOGIQUE DE FRANCE.

THE autumnal meetings of this Society were held from October 2 to 9, in Paris and its vicinity. They have acquired so wide a reputation for success and good management, that some members of the British Mycological Society determined this year to attend them. On Saturday, October 2, a party of four left London for Paris. It may as well be stated of whom this party consisted, and what their special objects in so doing were. In the first place, Mr. Rea, the secretary of the British Society was there with the avowed intention of learning the secret of the success of the French Society, as well as of mastering the French *Russulæ*; second, the writer, to find out what he could about the Potato-disease treatment, for it was at the meeting of the society ten years ago that he first heard of "Bouillie Bordelaise;" Miss Rose, of Worcester, to point the species found; and Miss Plowright, to do the interpreting.

The headquarters of the Society, 84, rue de Grenelle, at 9 A.M. on October 3, fairly enchanted the visitors by the highly interesting and beautiful collection of specimens it contained, all neatly arranged on white plates, with their names plainly written on white, red, or green labels, as the species were edible, poisonous, or of botanical interest only. We were received by M. Boudier, looking no older than he did ten years ago; and by M. Perrot, the indefatigable secretary. Of the number present, we saw MM. Patouillard, Bourquelot, Roze, Pelteoreau, Radais, Gaurin, Harlay, and many more whose names we did not catch; but before the meetings were over they had all done their best to make our visit enjoyable. The walls were decorated by paintings (of fungi, of course) by MM. Boudier, Pelteoreau and others, but our attraction was to the tables. *Polysaccum*, *Tulostoma granulosa*, *Favolus europæus*, *Montagnites* from the shores of the Mediterranean; *Guepinia helvelloides*, *Polyporus melaleucos* and *P. ovinus*, *Cortinari* Bulliardii, *Agaricus corydalina*, *A. geoginus*, *A. Eryngii*, *A. madidus*, all of which are either absent from, or exceedingly rare in Great Britain. The English visitors lost no time in settling down to work, sketching, making notes, and reading up. In fact, so interested was the British secretary that rumour says he was so busy that he only spoke six times during the two days the exhibition was open; while the writer is credited with asking 600 questions, not only through the medium of the official interpreter, but, failing her, of any unfortunate passer-by, or, as a last resource, on a half sheet of note-paper, the backs of old envelopes, and what not.

October 5 and 6 were spent in excursions in the forest of Compiègne, the necessary arrangement for sleeping, eating, driving, &c., being made by the energetic secretary, M. Perrot, who went down the day before for that purpose. Here we found *Inocybe maculata*, *Polyporus umbellatus*, *Clavaria fennica*, *Tricholoma immundus*. On Wednesday we had *déjeuner* in a room built in the forest at Pierrefonds for the late Empress; there were found *Tuber bituminatum*, *Agaricus junquillea*, *Godey*, *griseo-cana*, *Hydnum amicum*, &c.

October 7 was spent in Paris, a quiet day, so as to allow time for the study of our finds. At 2 P.M. a meeting of the society was held at which the writer presided, having had the honour done him of being elected honorary president for the *session extraordinaire*. Various specimens were exhibited, and several communications of great interest made, principally on fungus disease of plants, notably, one on black rot in grapes; and another on a disease of the roots of Chestnut trees.

October 8 was spent in an excursion to the forest of Herblay. No sooner had we arrived than the beautiful *Lycoperdon villatum* was gathered, and shortly after a whole bed of *Geaster hygrometricus* was encountered, *Helvella pithyophila*, *Lactarius scrobiculatus*, and the beautiful *Cortinarius rufo-olivaceus* were amongst the finds; but a frost the previous night had done irreparable damage to the larger fungi. In France ladies seldom take part in such out-door scrambles as fungus hunters undertake, but two ladies accompanied this excursion. This we took to be a delicate compliment to our English ladies, who had hitherto been rather "out of it" amongst so many gentlemen. Our interchange of ideas was this day greatly facilitated by the kindness of M. Philippe de Vilmorin.

The forest of Carnelle was to have been visited on October 9, but owing to the frost the British mycologists decided "to leave it until next time." This much is certain (1) France is a good country for fungi. (2) The French mycologists are exceedingly kind and thoughtful hosts, they made every effort to make our visit profitable and enjoyable; and I fear, if the truth must be told, to take them all round, they know a great deal more about fungi than we do. *Charles B. Plowright, M.D., King's Lynn, Oct. 16, 1897.*

MANCHESTER AND NORTH OF ENGLAND ORCHID.

OCTOBER 21.—Present: J. W. Thompson, of Walton Grange, Staffordshire, in the chair; along with Messrs. Geo. Shorland-Ball (Vice-Chairman), W. Stevens, A. Warburton, G. W.

Law-Schofield, H. Greenwood, E. J. Sidebotham, D. B. Rappart, R. Johnson, John Cypher, John Leemann, Sam. Gratrix, Jas. Anderson, and W. A. Gent, Hon. Sec.

This was by far the largest show yet held, some of the choicest varieties in cultivation being exhibited. It is impracticable to notice the whole of the exhibits, and some names of exhibitors and some good things must, therefore, be passed over. There were about sixty different plants brought up for adjudication, and out of these no fewer than eight received awards of First-class Certificates, and fifteen received Awards of Merit.

Undoubtedly the greatest novelty was *Cattleya labiata* Petersiana, exhibited by ALBERT WARBURTON, Esq., Vine House, Haslingden (Mr. Tom Lofthouse, gr.). The colours are vivid, and of remarkable glossiness; without the slightest shading in either the petals, sepals, or labellum, the colour being of a deep cardinal-red throughout. It received a First-class Certificate. One of the members proposing a small Gold Medal for the novelty, but this was left over for consideration.

The next important plant, which was shown before the Royal Horticultural Society in London some years ago, and received the highest honours, was the plant and variety of *Cattleya Hardyana* (First-class Certificate). This consists of a portion of the famous plant first brought to light by the late George Hardy, and was disposed of when that collection was dispersed. It is at the present time in the possession of T. Statter, Esq., Stand Hall, and as shown was a picture of beauty. The numerous varieties of the so-called *Hardyana* from an orchidist's point of view, cannot compare with this variety. The flowers are large and of great substance, well formed, with the segments flushed; the labellum is of a beautiful crimson, with a flushed edge; the spots adorning each side of the extremity of the column are white, and the yellow surrounding the white is conspicuous, as are also the lines of the same tint traversing the epichilium; and the whole a grand flower. Mr. Johnson took also a First-class Certificate for *Cattleya aurea* Johnsoni, one of the most distinct of the aurea section. It is a curious combination of colours which Mr. Johnson fears will not remain constant, and forms another example of how easily buyers and sellers can arrive in the law courts.

WM. LAW-SCHOFIELD, Esq., had two First-class Certificates for *Cypripedium Lawrebel* and *C. Lawrenceanum* Hyeaen, both acquisitions: the former having a standard of surpassing brilliancy of either of its parents; the other, which bears the name of Frances Marie, is one of the best of this cross, the standard being large, and the colours and lines clear.

H. H. BOLTON, Esq., Heightside, Newchurch (Mr. T. Eastman, gr.), had a *Cattleya labiata* with white segments, and a lip slightly stained with puce, which I described in the *Gardener's Chronicle* as *C. labiata* Ballie, and which is practically the same as *C. l. Measuresiae*. Both gentlemen agree to have it named *C. labiata* Elsie, after Mr. Bolton's daughter. It appears likely to improve under cultivation.

SAMUEL GRATRIX, Esq., West Point, Whalley Range (Mr. McLeod, gr.), received a First-class Certificate for *Cattleya labiata* Sam. Gratrix and *Cypripedium* insignis, var. *Sanderi*. The *Cattleya* is of the pure and white in regard to the petals and sepals, of good substance; the labellum white with a cerise-coloured blotch, having pale flushed edging. It is a flattish flower of fine form, and distinct. The *Cypripedium* is well known and much appreciated, and this example was as good, if not better, than the famous "Baron's variety."

JOHN LEEMANN, Esq., West Bank House, Heaton-Mersey (Mr. Edge, gr.), received a First-class Certificate for *Cattleya Hardyana* of quite a different type from the first one flowered at Pickering Lodge. It is of deep colour, and one in which *C. gigas* and the deeper tints of *aurea* are seen, but it is lacking the beauty of the other.

Among the Awards of Merit, Mr. STATTER had the red *Cypripedium Locanum* (Memoria Moensii), and the large and clear *C. insignis* Statteriana.

WM. THOMPSON, Esq., of Walton Grange (Mr. Stevens, gr.), had *Cypripedium Charlesworthi* roscum and *C. Juno*. He had also a fine large-flowered *Vanda Kimballiana*, larger and brighter than the normal flower, for which Mr. Stevens received a Cultural Commendation. The chairman of the Society also received the 2nd honours for *Odontoglossum crispum* bellissimum, a very large flower, with heavy blotches of sienna-brown; along with a Cultural Commendation for a so-called *Cypripedium Spicerianum* magnificum with twenty-one good flowers upon it—but it is not magnificent. G. LAW-SCHOFIELD, Esq., Rawtenstall (Mr. Schill, gr.), had 2nd honours for *Laelia purpurata* Anna Louise, and for *Cattleya* x *Mantini*.

HUGH LOW & CO., London, received awards for several *Cypripediums*, the most distinct of which was *C. Swanianum* virescens; this firm also put up *Laelia* prestans alba, bearing a good flower on a small plant (Award of Merit).

WM. C. CLARKE, Esq., Sefton Park, Liverpool (Mr. Jones, gr.), had a showy lot, but the only one which was noticed was a finely grown, good variety of *Cypripedium* insignis, called Col. Clarke, which received a Cultural Commendation.

E. J. SIDEBOTHAM, Esq., Erisdene, Bowden (Mr. Shiner, gr.), had *Laelia Perrini* in fine colour and in good flower; and *Cattleya maxima*, which was a remarkably distinct species.

F. SANDER & CO., St. Albans, had an Award of Merit for an *Odontoglossum grande*, called West Point—a meaningless name. It is very dull in colour, and resembles a bad *O. Schleperianum*. *Cypripedium Ernesti* is too like *Youngianum*—it was awarded 2nd honours, however. We are

getting too many of that sort, and it might be well to pass them by.

MR. LEEMANN showed *Cypripedium Harrisianum* called *superbum*—a good thing; and the pretty *Epidendrum Wallisianum*, which the committee requested should be brought up again.

The groups were exceedingly showy, but no awards were made. They came from the chairman, HUGH LOW & CO., and CHARLES WORTH & CO. The finest exhibits were in cut flowers, Mr. JOHNSON showing *C. aurea*, marked in an abnormal manner; and Mr. STEVENS a fine *Laelia Perrini* alba—it was a pity that he had not brought the plant as well.

After the awards were made, the committee resolved, proposed by Mr. Ball, seconded by Mr. Schofield, and unanimously carried, "That in awarding First-class Certificates, the committee shall be guided entirely by the merits of the flower brought before them, without regard to the fact that the same or a similar variety may have already received a First-class Certificate, but no member shall receive more than one First-class Certificate for the same plant."

Also proposed by Mr. Ball, seconded by Mr. Johnson, and unanimously carried, "That from this date no First-class Certificate be awarded to cut blooms, except the committee are of opinion that it would have been risky to bring the plant from which such blooms have been taken."

Proposed by Mr. G. Shorland-Ball, seconded by Mr. Stevens, and carried, "That rule 4 be expunged from the rules of the society, and the following rule be inserted:—4. The annual subscription for gardeners shall be half a guinea, and in all other cases one guinea." J. A.

THE ROYAL SCOTTISH ARBORICULTURAL AT DOLPHINTON.

OCTOBER 23. — By invitation of the venerable owner, JOHN ORD MACKENZIE, Esq., W.S., about sixty members of the Scottish Arboricultural Society visited, on the above date, Dolphinton, a charming place embowered in trees and environed by hills. The train left the Waverley station at 10.15 A.M., and returned at 4.55 P.M., thus furnishing time for the visitors to explore the sylvicultural treasures of the woods, glens, park, and garden.

Mr. Mackenzie met and gave his guests a hearty welcome at the station; Sir James Fergusson, of Spittalhaugh, joined the party at Linton, and was indefatigable throughout the day in assisting his neighbours, Mr. and Mrs. Mackenzie, to unfold the sylvan treasures, and treat of the associations of this well-wooded estate. It soon became apparent that Mrs. Mackenzie was by no means the least accomplished of these three arboriculturists. The first halt was called at the bridge where the water divides into two parts, one part finding its way to the Tweed, and part to the Clyde. It was said that salmon occasionally pass here from one river to the other.

It may be stated here that the parish of Dolphinton is situated in the eastern division of Lunarkshire. It is bounded on the north by the parish of Dunsore, on the west by Balston, and on the south and south-east by Kirkcudbright, Linton, and Peeblesshire. It is also intersected by the rocks from Biggar to Edinburgh, and Peebles to Linton, and dominated to a great extent by the Blue Hill of Dolphinton, some 1500 feet above the level of the sea, and which may be described as one of the links of the mountain-chain which binds the island from Stobbles Head to Allis Craig.

Another prominent feature rising more like an artificial mound than a natural mountain—the Bromilow, so well known in the history of our commercial supremacy on the Clyde, is also within sight, barring fogs, of the Black Hill of Dolphinton.

Within a short distance of the new lodge on the other side of the house, no fewer than five parishes meet on the estate, viz., Kirkcudbright, Watton, Skilling, Biggar, Dolphinton; the general elevation of the parish and estate being some 800 feet above the level of the sea. A curious record is placed on the steps of the front door of the mansion to the effect that this stone is on a level with the top of Arthur's seat at Edinburgh. But though thus highly elevated, and the soil mostly a sandy loam, or a dry, friable earth, yet so skilfully has the estate been managed by the present proprietor and his father, who began a good deal of the planting, that the physical features of this district have been greatly softened and improved, and the local climate sensibly ameliorated through the shelter and functions of the rising plantations.

The last visit of the Arboricultural Society here was in 1880; and those who were present on that occasion were loud in their praise of the growth and progress the trees had made in the last seventeen years. But before the vigorous work of reclamation and improvement began—some seventy years since—on this estate of some 3000 acres, it was largely a barren waste. Of course, a few of the fine old Beeches, Elms, Ashes, Sycamores, Oaks, Limes, and Larches, that sweep up the park to the front door, and tower away majestically in various directions, belong to an earlier period, and must be more than a hundred years old. The old Larches, too, look remarkably healthy; while the young ones mixed with the Scots Firs further up the hill-sides, are not so healthy as the Scots. The Douglas Fir and other exotic Conifers are, however, the great feature of Dolphinton. Near to the houses one fine Douglas fir over 9 feet some 3 feet from the ground. Others almost as large were found in various parts of the wood or dell; and a fine group planted as seeds by the Misses

Mackenzie at Christmas, 1864, had made great progress. Mr. Mackenzie was also specially proud of a scarlet Oak, *Quercus coccinea*, which, however, had been somewhat severely cut by frost.

After passing through the well cropped gardens, and paying a visit to the greenhouses, &c., the visitors were mustered by their hosts to a most sumptuous lunch. After a hearty vote of thanks, signing their names in Mr. Mackenzie's book, and being photographed, the journey through the plantations was resumed. Here trees and avenues of the Douglas Fir, *Abies magnifica*, *A. nobilis*, *Picea Albertiana*, *P. nigra*, *P. orientalis*, *P. Menziesii*, the Lawson Cypress in many forms, the Japanese and the Giant Cypress, were found; also heaps upon heaps of *Rhododendrons* in the most robust health, *Spiraea* of sorts, Dog-wood and Spindle trees, in bright foliage.

In an open place in the dell, surrounded with a prodigality of silvan beauty, one of the most interesting functions of the day was performed. A nice thriving plant of the Himalayan Spruce, *Picea Morinda*, presented to the society by Mr. Foreman, nurseryman, Eskbank, was planted by Mrs. Mackenzie, assisted by her husband and the head forester, who has been on the estate for some sixty years, and the head gardener.

With three hearty cheers, the visitors took another turn through the old kirkyard, where a Sycamore tree with a girth of 15 feet was found; past a lake near a villa on the estate, with lines of beauty and grace, said to have been designed by Mr. Mackenzie, and so over and away through more rising woods, and across hills flooded with sunshine, to the station, after one of the most profitable and pleasant outings ever spent by the society.

The three W's of Dolphinton are the woods, the water, the walks. As to the woods, only a few more touches were needed to bring them into line with brown October. As to water, one lovely lake was noted, and its ezy, curling, pond provided with welcome shelter from the blasts. A third lake was seen in the hanging plantation above the mansion, from whence the water is allowed to fall by gravity to storage-tanks, whence it is distributed by means of pipes. A "water-house," sweet and tempting, with glazed tiles as a floor, &c. As to the walks, most of them are narrow, nicely curved, and sheltered in such a way that they are warm even in the coldest weather, and revealing many a peep of a lovely landscape. D. T. F., October 25, 1897.

NATIONAL CHRYSANTHEMUM.

OCTOBER 25. — A considerable number of blooms was staged on this occasion, and the committee were engaged for some time in examining them. It is due to the committee it should be stated, they set up a high standard now so many new varieties are coming to the fore.

MR. W. J. GODFREY sent from Exmouth a collection comprising nearly twenty new varieties, and First-class Certificates were awarded to the following new varieties:—*Malan's Philippe Rivoire*, a large white Japanese, broad petals, somewhat reflexing—a very fine exhibition variety; *Elis Curtis*, a large, full, bright yellow Japanese, in the way of *Boule d'Or*, not quite so deep in colour—a grand exhibition variety; and *Lady Ridgway*, a very large, broad-petalled, incurved Japanese, lilac-purple on the surface, with a pale amber reverse, much incurved, and decidedly distinct. In addition, Mr. Godfrey had *Werther*, *George Gover*, and others, of fine quality; also, three new incurved varieties: *King of Yellows*, *Topaz Orientale*, pale primrose-yellow and *Ma Perfection*, a promising white.

From Mr. C. SHAW, Fooks Cray, Kent, came *Elise Teichmann*, a white Japanese, which has been seen in finer condition than that in which it was shown on this occasion; but of its value and beauty there can be no doubt.

From Messrs. H. CANNELL & SONS, Swanley, came *Lady Hanham*, a sport from *Charles Davis*, which was a sport from *Vivand Morel*, like its ancestor, of fine shape; the colour delicate pink, with pale citron centre, but apparently liable to come variegated in character (First-class Certificate). A very delicate soft pink incurved Japanese named *N. C. S. Jubilee* is of a very promising character, but failed on this occasion to secure a majority of votes for a Certificate. *Souvenir de Molines*, pale reddish chestnut and orange, but a somewhat variable variety, is likely to prove useful.

MR. W. WELLS, Earlswood, Redhill, sent a number of new varieties, chief among them *G. J. Warren*, a pale yellow sport from *Madame Carnot*, which appears to possess all the good qualities of the type; and Mrs. G. W. Palmer, a sport from Mrs. C. H. Payne, the colour ruby amaranth, with a buff reverse, certainly a promising flower; this also came from Messrs. GODFREY and NORMAN DAVIS. From Mr. R. OWEN, Maidenhead, came several new varieties, chief among them *reflexed J. E. Lager*, a pale yellow variety in the way of *Dorothy Gibson*, but thought not to be so good.

MESSRS. J. R. PEARSON & SONS, Chilwell, Notts, sent *J. Leadbetter*, a sport from *Madame Edward Ray*, deep orange with yellow centre, a flower which is likely to be next better developed.

From Mr. NORMAN DAVIS, Framfield, came an exquisite incurved Japanese, Mrs. S. C. Probyn, delicate blush-pink deepening to soft pink, large, full, broad-petalled, and very fine (First-class Certificate). Among some varieties recommended for market work was *Pride of the Market*, deep gold, with a surface of pale reddish-brown, very bright, and showy (First-class Certificate). Another market variety, white, something in the way of a small *Avalanche*, failed to secure this award, though very pleasing in shape and appearance.

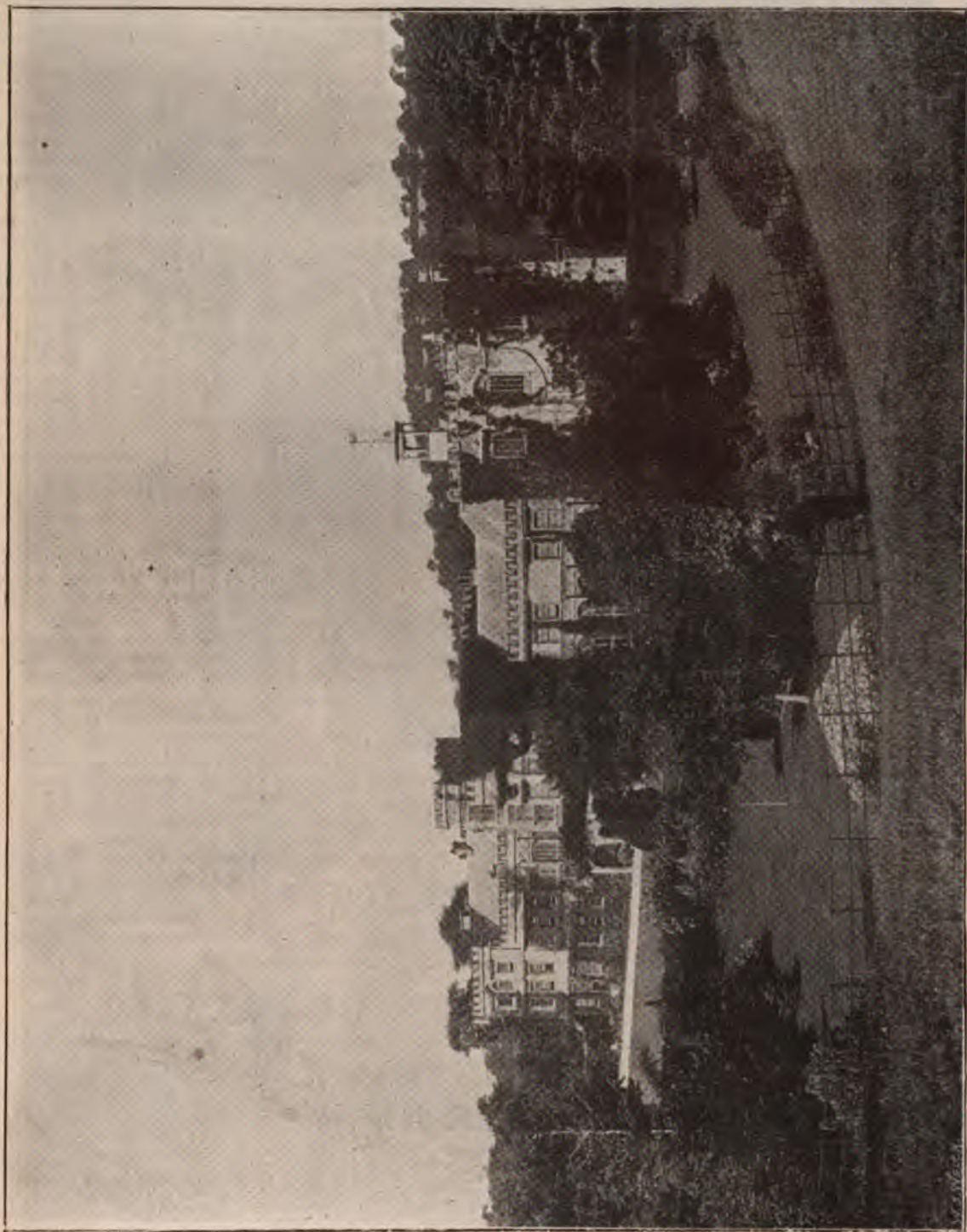


FIG. 98.—FORDE ABBEY, CHARD. (SEE P. 322.)

tern station of Chard Junction may be thin a mile and a half. front of the Abbey is just 100 yards long. its northern side the chapel, with the mitories, well preserved, behind. Next come the cloisters, with the old refectory

tapestry, copies of the famous cartoons of Raphael, representing ancient historical and biblical scenes. It is reputed that a former owner, Mr. Francis Gwyn, refused the offer of £30,000 from Empress Catherine of Russia for these grand masterpieces. The original founders of the Abbey were the Cistercian Order of

Various persons possessed the Abbey, including Mr. Francis Gwyn, a distinguished man of his day, whose son, John Francis Gwyn, was even more so, and it is stated that in 1815 he let the Abbey to the famous Jeremy Bentham, who there wrote some of his famous philosophical works, and during whose res-



FIG. 95.—THE CLOISTERS, FORDE ABBEY, CHARD. (SEE P. 312.)

This fine room, which originally ran to eight of the Abbey, is now divided by the old features have been religiously Beyond the cloisters come the noble orch and hall, and beyond the living rooms, art from many most interesting monastic logical features, are some grand pieces of

Monks, and the date early in the twelfth century. In 1539, on the dissolution of the monasteries, the Abbey became the property of King Henry VIII., who leased it and the adjoining lands to Richard Pollard, at the rent of £49 6s. 6d. This figure shows something of the relative values of estates now, and what they were at the time of the Reformation.

dence was visited, amongst others, by Sir Samuel Romilly, who wrote a glowing description of the "magnificent and beautiful palace" in which he found his friend the philosopher residing. In 1846 it passed out of the possession of G. F. W. Mills, Esq., of Bristol, into that of Mrs. Bertram Evans, and is now the property of her son, Mr. W. H. Evans,

who happily shows himself to be a liberal as well as an enthusiastic admirer and protector of his charming and ancient home.

In embellishing the Abbey, the art of the gardener has been lovingly utilised, and beautiful climbers on the walls, flowers, and lawns, with broad terrace-walks, extensive hardy flower-borders, broad, grassy expanses of smooth lawn, noble trees, and wide-spreading shrubberies, enrich the southern or park side of the Abbey; whilst behind are the kitchen gardens and glass-houses. Mr. J. Crook, a very able, energetic—indeed, an enthusiastic gardener—is here the presiding spirit, and well does he seek to associate all that is decorative with the building, which forms so interesting a central figure. Whilst there is ample evidence of ability in cropping and in production, there is an absence of that primness that may be all very well in association with newness, but would be sadly out of keeping with so ancient a place. The very utmost is made of good trees and shrubs, of glades and walks, of foliage and flowers, in all directions; but there is no aping of the modern styles one sees elsewhere to repletion. Vegetables and fruits are well and abundantly grown, and every inch of space in an all too limited area is fully utilised. Almost the only attempt at modernising anything is found here and there in the pleasure-grounds, where—and most excusably—effort has been made to introduce coloration, especially in foliage, but still so toned as in no sense to seem offensive. Where it was possible to introduce a nice foliage or flowering tree or shrub that would in due season give some special coloration, especially as a rather distant object, that has been done—and very acceptably too, where there had so long been so great a wealth of green foliage and herbage as here. Of flowering and foliage material, *Pyrus Malus floribunda* and *spectabilis*, *Robinia Decaisneana*, *Bessoniata*, *bispida*, and *sempervirens*, *Aralia spinosa*, *Dimorphanthus mandshuricus*, *Pavia macrostachya*, various coloured double and single thorns, the Scotch Broom, *Spiræa arifolia*, *Lindleyana*, and *callosa*, *Berberis vulgaris* and *Darwini*, *Catalpa syringæfolia*, *Pawlonia imperialis*, *Philadelphus grandiflorus*, Red Horse-Chestnut, *Prunus Pissardi*, *Acer Negundo variegatum*, numerous Japanese Maples, the pretty fern-leaf Beech, also the purple ditto, and purple Hazel, cut-leaved Alder, golden Alder, *Rhus Cotinus*, *Liquidambar*, with berried *Pyruses*, and many other similar things, flowering and foliage, tell of the efforts made to give colour in respective seasons. The bridge leading over the moat to the gardens still exists, the balustrades being covered with Ivy, and on that grows luxuriantly such old climbing-Roses as *Félicité-Perpétue* and the Dundee Rambler. Altogether, the place is full of interest. The pictures of the Abbey-front and the cloisters (figs. 95, 98), are from photographs taken by Mr. Higgins, of Chard. A. D.

TREES AND SHRUBS.

THE WEEPING SILVER FIR (ABIES PECTINATA PENDULA).

THIS rare variety of our common Silver Fir is at once the most remarkable of the several forms of this well-known tree. Neither in the *Kew Hand-list of Conifers*, nor in the *Pinetum Danicum* (where varieties have received special attention) is the Weeping Silver Fir referred to. [It is in *Masters' List of Conifers*, in *Gordon's*, and in *Bumser's Enumeration*.] *Gordon*, in his *Pinetum*, says that *P. pectinata pendula* (Godefroy) is of French origin, with the branches and twigs drooping. Whether or not this is the particular variety at present under notice, matters little; one thing is certain, that the specimen which furnished material for this note, is not only well worthy of the name, but is, in all probability, the largest tree of its kind (if, indeed, there be any others, which I have not heard of) in the British Isles. It is growing in rather an obscure position hard by the lawn at Emmetts, a beautifully situated property on Ide

Hill, at Sevenoaks, and in company with giant specimens of *Thuja gigantea*, hort., *Abies nobilis*, and hosts of other Conifers. The tree is 42 ft. high, the branches being so pendulous that no part of their spread exceeds 4 feet in diameter, while they hang down parallel to the main stem for from 3 to 5 feet in length. The leaves are much shorter than those of the species, rarely exceeding from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch long, but are characterised by the same silvery bands on the under and deep green on the upper surfaces. Curious to say, the tree does not appear to be a grafted specimen—at least, I could discover no traces of grafting. A. D. Webster.

THE MANGOSTEEN.

(See figs. 96, 97.)

THANKS to the courtesy of the authorities at Kew, we have been enabled to taste a ripe fruit of the Mangosteen grown in Trinidad, and sent home by Mr. Hart. The fruit is of the size of a small Orange, leathery, purple, with a thick green four to five leaved calyx at the base, and a sessile four to five lobed stigma at the top, the stigmatic lobes long club-shaped, flattened. Each seed is enveloped in a white or pinkish juicy pulp, which has a very delicate and agreeable flavour, though it does not here bear out the eulogistic verdict of travellers. The thick leathery rind offers ample protection, so that its importation should be easy. In 1875, similar fruits were sent us by Mr. Prestoe, also from Trinidad. The first time the tree fruited in this country was at Sion (see our volume for 1855, and the plate in the *Botanical Magazine*, t. 4847).

THE ROSARY.

ROSES, WHAT TO PLANT, AND HOW TO DO IT.

THE all-absorbing question amongst Rose-growers is now—How am I to re-arrange my Rose-garden? The answer to this involves so many questions. "On what stocks do you wish to have your plants growing?" "Do you intend to grow for exhibition, or for the home adornment of your garden?" "Have you walls or trellises on which you can grow climbing-Roses?" And perhaps, most important of all, "What is the character of your soil and climate?" One would think that now-a-days there was no longer room for mis-statement or incorrectness in classifying Roses, yet more than once lately I have seen such incorrectness as that of classing *Souvenir de la Malmaison* amongst Teas. Surely writers ought to be a little more careful, and avoid such mistakes as this. Perhaps one of the most important questions for a Rose-grower is, On what stocks am I to have my Roses? "Oh! have nothing to say to stocks," someone says; "grow Roses on their own roots, and you will be on the right way to success." In connection with this, I read the other day a remarkable statement, apparently coming from authority, saying there was great difficulty about obtaining them, because nurserymen were more anxious to get rid of their standards than to take the trouble of striking Roses. Now, I know most of the large Rose nurseries, and my opinion is, that the standards form a very small portion of their stock, and that there is always a sufficient demand for them, and that quarters where they are grown are almost empty as the autumn advances; while another writer would sweep out of existence altogether except for maiden blooms, the Manetti stock, which has done more to advance the culture of the Rose than any other, and which, notwithstanding the denunciation to which I have alluded, is likely to survive for many a long day. There are three stocks which are most largely used now—the Manetti, the seedling Briar, and the Briar cutting. The manner in which Roses are budded adds another element of success in their growing, namely, that of budding them very low down, so that after a while there is a double source of strength, the

stock and the scion, which has now made roots for itself, and which accepting the services of its foster mother, starts also on its own account. One argument put forward in favour of Roses on their roots is, that they are so much longer lived—this is, I think, very questionable. I have, for instance, two plants budded on the Manetti in my garden which are between forty and fifty years old, and which give me a good crop of blooms every autumn; they are the fine old favourite, *Souvenir de la Malmaison*. I have also plants of climbing Roses, such as *Rêve d'Or* and *Madame Berard*, budded on the seedling Briar, which are between twenty and thirty years old. When people advocate the abolition of the Manetti stock, they seem to forget how easily it is struck and worked. The seedling Briar is very often a difficult matter for the budder, as the stem is so small; and this is probably one of the reasons that has led of late years to the introduction of the Briar cutting; and with these three stocks I think growers may be very well content—unless, indeed, they are exhibitors, amongst whom there remains a strong persuasion that there is no stock from which you can get such good Tea Roses for exhibition as on the standard or half-standard woodland Briar. It is strange that it should be so, for every severe winter makes sad havoc amongst them, not only here but in France; for it should be borne in mind that the northern districts of France suffer severely from cold. I suppose that Brie Comte Robert, which was the nursery for Roses not only for France but for foreign countries, has never recovered the disastrous winter of 1870, when every standard Rose in the district was killed—and there is no remedy for such a disaster; you can mulch and otherwise protect your dwarf Roses, and, however they seem to be cut down, they will spring up from the underground stems, but the Briar-Rose, when the top is killed, has no power of recovery. It is recorded of a well-known amateur who was just beginning his Rose-growing, that he once went to see the garden of the president of the National Rose Society in the midland counties, and came away with the conviction which he published to the world that the Roses were all dead; he was told, however, if he came again in the following spring, he would have a different tale to tell. Moreover, Roses are not so easily struck from cuttings. There are some kinds which seem positively to reject the plan; besides, if a Rose has a delicate constitution, it is much more likely to succumb on its own roots than when it is budded on a moderately strong stock which may help it. On the whole, then, I do not think that Rose-growers need trouble themselves about having own-root Roses. I would therefore recommend that all hybrid perpetuals of strong and vigorous growth, such as *Etienné Levet*, *Margaret Dickson*, and *Magna Charta* should be obtained on the Manetti, while all Tea-scented Roses and Noisettes should be procured on either a seedling Briar, or a Briar cutting. There are, it is true, some Tea-scented Roses of very vigorous growth, such as *Marie Van Houtte*, which do not object to the Manetti stock, but I think it would be safest to have all Tea-Roses as I have said on Briar. With regard to the so-called Hybrid Teas, there are some which approach very closely to the Teas, such as *Kaiserin Augusta Victoria*, and these I think should be grown upon the Briar, either seedling or cutting; while others, such as *Clara Watson*, which approach more nearly to the H.P.s, may be grown on the Manetti—but while saying this, I readily acknowledge that all Roses take to the Briar very kindly, and probably in course of time it will be the most generally used stock.

There are two points on which rosarians generally, I think, ought to put down their foot; one is, to have no Rose which is described in catalogues as moderate or difficult to grow. I know that this will exclude some very beautiful Roses, but as long as we are content to keep on growing these almost as annuals, we shall not find Rose-growers anxious to supply us with better growing kinds; and what is the use of growing a Rose that will give you a few blooms in the first season and then dwindle away? "What, then," it may be said, "am I to give up growing *Horace Vernet*?" "Yes, unquestionably, unless you are an exhibitor."

It is heartbreaking to see the after-history of this grand Rose. There are now in almost every variety of colour Roses of good constitution and habit, so that we may dispense with these weakly and uncertain growers. The other point is a somewhat more difficult one, namely, that we ought to avoid all scentless Roses. Since Victor Verdier was sent out, there has been a series of Roses without perfume owing their origin to this Rose, some of which are very beautiful, and which Rose-growers would be very unwilling to give up. There is no greater favourite than Baroness Rothschild, yet it has not a trace of perfume, and so many of the lighter-coloured variety in the same series are very disappointing in this respect; nor do we require what I may call a deteriorated tea-scent or the faint perfume of the Bourbons. What we really do want is, Roses with the true attar of Rose-scent, or the delightful perfume of the old Provence Rose, and I would go so far in this direction as not to award any honour to Roses deficient in perfume. This, perhaps, may lead raisers of seedling Roses to endeavour to give us some more brilliant colours, because, I think perfume and colour go very much together. The idea of a scentless Rose never occurred to our old

persons will welcome it on that account. Another flower which has increased in favour the last year or two is Clio, sent out by Messrs. William Paul & Son; it is of flesh colour, shaded with rosy pink in the centre, and is another valuable kind for pot culture. *Wild Rose.*

(To be continued.)

CULTURAL MEMORANDA.

CLERODENDRON FALLAX.

THIS species is one of the very finest of the genus, and is unsurpassed for the decoration of the plant-stoves or warm conservatories. A native of Java, it produces large cordate-ovate leaves of a dark green colour. The flowers, bright scarlet, are borne on erect panicles, thrown up well above the foliage. Clerodendrons delight in a moist humid atmosphere during growth, but need to be rested when they have ceased to flower in the autumn, by exposing the plants to the sun and air, and gradually lessening the amount of water given them until the leaves are quite ripe and fall off, the wood will become perfectly ripened. The plants may then be placed under the

nately with clear water. Clerodendron fallax may be propagated either from cuttings or seed. Cuttings should be made from pieces of the old wood, and these may be inserted round the sides of a 48-size pot in sandy soil, and plunged in the propagating-pit up to the rim; or the young shoots may be taken off with a heel of the old wood attached, and treated in the same way.

To raise plants from seeds, sow in February, and plunge the pots or pans into a strong bottom-heat. When the seedlings are large enough, pot them off, and keep them growing freely. Such plants may be bloomed in quite small pots, and they are then very effective for house and table decoration. *H. T. M., Stoneleigh.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Bayleigh, Essex.

Pruning and Training Wall Trees.—In the present month, the pruning and training of wall-trees may be begun, the Morello Cherry being the first taken, and the last the Peach and Nectarine in January and February. The Morello Cherry requires merely to

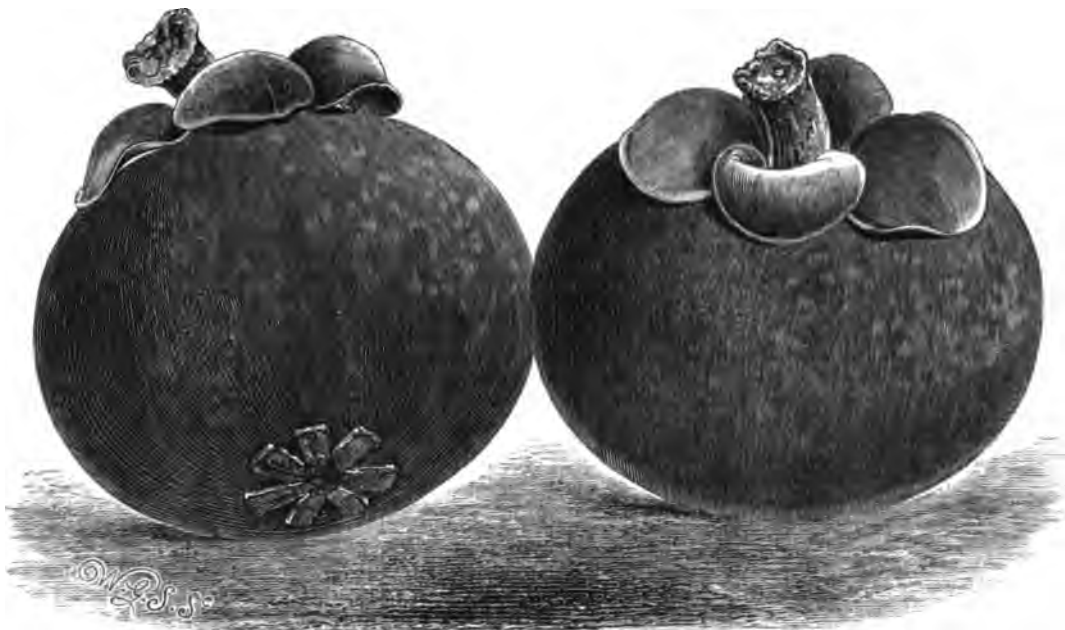


FIG. 96.—THE MANGOSTEEN (*GARCINIA MANGOSTANA*). (SEE P. 321.)

writers, whether in poetry or prose, and certainly with the great improvement that has taken place in other respects in the flower, we ought to look, I will not say to improvement, for that perhaps may be difficult, but to maintaining these most desirable qualities in our modern flowers; and I do think that, where the blood of the old Damask enters into our Roses, there we have a good perfume. In deciding upon what Roses shall be added to our collections, I deal mostly with those of recent introduction. I will not say absolutely new, but comparatively so.

In the Hybrid Perpetual class of exhibition Roses there are but few novelties. The most brilliant coloured flower is the last of Mr. Bennett's Roses, Captain Haywood: it was not looked upon with much favour when first shown, being considered too thin, but it has considerably improved since then; it is admirably adapted for pot culture and forcing. The flower as shown by Mr. George Mount, at the Drill Hall, in the earlier part of the year, testifies to its usefulness in this respect. Mrs. Sharman Crawford and Helen Keller, two of Messrs. Dicksons' latest additions, are very beautifully pink-coloured flowers, and may safely be added to any collection. Messrs. Paul & Sons' Rose, Alan Cheales, is a fine flower, bearing a good name; its colour is novel, and many

stage in the stove, in such a position that they will receive no drip, and yet where they are prevented from remaining excessively dry.

Early in the month of March shake the plants out from the old soil, and at the same time shortening the strongest roots. Then prune the plants back to within two or three buds of the old wood, and pot them into as small pots as they can be conveniently put into. For a potting compost, use fibrous loam two parts, peat one part, and dry cow-manure one part, with an addition of crushed bones, charcoal, and silver-sand.

When potted, plunge the plants in a bed of fermenting material, the temperature of which should range from 75° to 80°. Water with care until such times as the roots have got well into the new soil, and then more copiously. Moisten the paths and stages frequently by sprinkling. As the plants progress in growth, maintain a temperature of from 65° to 70°, ventilating freely on all favourable occasions, and as the plants require it shift them into larger pots. When they have become well established in these larger pots, afford them liquid-manure freely, which may be prepared by placing in a sack some sheep or cow-dung, with soot added, and immersing it in a tub of rain-water. Allow it to remain for a week before using, when it may be applied to the plants alter-

have its shoots thinned out, so that they may be trained-in about 2 to 4 inches apart, leaving as many young ones as will make a well-balanced tree; cutting back the old, bare, and fruitless shoots to their base, and fore-right shoots to one wood-bud. Strong growths likely, if left, to starve others, should be removed, or where it can be done, bent downwards for a season or two. The only permissible form for the Morello as a wall-tree is the fan, in which, as is well known to gardeners, the main branches radiate from the centre, like spokes in a wheel, the minor shoots following in the same direction. In the case of young trees of last year's planting which have made uniformly strong growths, bend the unpruned shoots towards the ground, and secure them to the wall with nails and shreds in that position, the bend in the shoots starting from the point at which the lowest of the new shoots are required, say, 4 or 5 inches from the base. The check thus given to the flow of the sap will cause a sufficient number of wood-buds to push from the bent shoots as to form a fan-shaped head in the second year after planting. These remarks are equally applicable to other kinds of wall-trees, including trees planted during the present season. As soon as the buds nearest the base of the shoots bent down have pushed into growth, the nails must be drawn, the main shoots spread out at the proper distances apart and secured thereto, the young shoots being trained regularly over the intervening spaces. In pruning Plums, Pears, and

sweet Cherries, the summer growth should be cut back to a wood-bud close to the base of the shoots, and the older fruiting spurs where standing very close should be thinned out, as crowding of the fruit-spurs and shoots on any fruit-tree or bush is an evil to be avoided. A space of from 6 to 8 inches should be given to the main branches of Plums and Cherries, and 9 to 12 inches to those of the Pear, unless fan-trained, when they will be further apart at the ends.

Insect Attacks.—Every sort of fruit-tree being subject to the attacks by insects of some kind, the cultivator must carefully examine each tree when pruning it, and those which are infested in ever so small degree with white or brown-scale or thrips, should be dressed with a mixture, consisting of about 6 oz. of soft-soap dissolved in a gallon of water, adding to this a wine-glassful of petroleum, a 3-inch potful of flowers-of-sulphur, and a like quantity of fresh soot, and sufficient clay to give the mixture the consistency of thick paint, stirring this well before applying it to the infested trees with a stiff brush. The mixture should be dabbed into every crevice, and especially about the fruit-spurs, taking care to coat over every shoot and branch—especially on the wall-side of the branches. Afterwards secure the branches loosely together, and suspend them at a distance from the face of the wall for a week or two before training them to the wall. In preparing this dressing, it is advisable to make enough at one time to meet all requirements, out-of-doors as well as under glass. Now is the time to prevent by means of grease bands the ascent of the winter moth.

THE KITCHEN GARDEN.

By W. FORD, Gardener, Highclere Castle, Newbury.

Peas for Autumn Sowing.—The sowing of Peas in the open for early cropping should take place in the first or, at the latest, the second week in this month. The varieties to sow are the round-seeded early podders; and as in the early summer a few days sooner or later in obtaining a dish of Peas is usually deemed by gardeners a matter of importance, a little more trouble taken in the matter of sowing, &c., will not be thrown away. The situation of the ground to be sown should face the south, and be sheltered by walls or tall hedges on the north and east. The soil should be light rather than heavy; and should the staple be tenacious, charred garden refuse, old potting soil, and the decayed refuse of the garden which has been once or twice turned and once heavily limed, may be trenched into the soil. Some light soil should be provided for covering the seed to the depth of 2 inches. The seed should be in larger quantities than is called for in spring sowings, and the drills should be drawn with the hoe of a width of 4 inches at the bottom, the seed being sown thinly, as nothing is gained by putting in the seed close together. The total amount of soil covering the seed need not exceed 3 inches. The rows may be from 3 to 5 feet apart, according to the height to which the haulm grows. When the tops of the plants appear, nets should be stretched across the land to keep away sparrows and other birds. Slugs and mice must be guarded against, the latter from the moment the seed is put into the ground. The soil along the rows should be occasionally stirred, and dressings of soot and lime given to deter slugs from approaching the plants. Coal-ashes, with the fine dust taken out, and of the size that will pass through a quarter-inch mesh, is capital for defending the rows from the ravages of slugs, if it be laid down to a width of 6 inches on each side of a row.

Broad Beans may also be sown at the same time as the Peas, but being hardier plants, and less liable to suffer from birds or slugs, they require less care in the preparation of the land. Mice and rats, however, eat the seed, and these must be trapped. The best crops of Beans are grown on a heavy soil if it be drained, and if there is any difference in the kitchen garden as regards the quality of the soil, that which is heavy should be chosen to carry the Bean-crop. Early Longpod is still one of the best for sowing now, and the seed should be dibbled in 4 inches deep and 3 inches apart, the rows being 2½ feet asunder. In very heavy land the dibble-holes, or drills if that method be adopted, may be partially or wholly filled with light soil, as recommended in the case of Peas.

Cabbage.—The various plantations of Cabbage are making too rapid progress, and the earlier sowings are almost fit for cutting; and in the case of Cabbages intended for spring consumption, they are much too forward. The second sowing or main crop Cabbages are strong and promising, which all tends to show how prudent it is to make two or more sowings in late summer and early autumn. The Cabbage grub has given some trouble in our garden, attacking also

the late Lettuces. Whilst the weather remains open, all vacancies in the rows should be made good, and a little of the soil drawn up to the stems in order to steady and protect them.

Brussels Sprouts should be cleared of decaying leaves, which if left on the stems engender decay in the Sprouts; preserving, however, the green leaves and the heads of the plants, these providing some amount of protection to the Sprouts, besides, their retention keeps the latter from becoming loose and large. When taking the Sprouts, it is advisable to remove them with a knife at a short distance from the stem.

Rhubarb.—To force Rhubarb properly at this date, a decided check to growth is first needed, which follows from lifting the stools that are required, and leaving them exposed to night-frosts, and sun and wind, for one or two weeks, previous to placing them in heat. Of course, bottom-heat is not really necessary for forcing Rhubarb, although it helps the quick development of the stalks, and the best sort of heat is that derived from stable-manure one-third, and fresh tree-leaves two-thirds, thrown together in a heap for a week, and then turned, and well mixed together twice, when it will be fit for use. Having made the hot-bed in a pit, or frame, or dark cellar, and trodden all firmly together, wait a few days in order to ascertain if it is safe to place the roots upon it, which it will be if it do not rise above 80°. First place a layer of light soil, leaf-soil, or other, 4 inches thick, then proceed to pack the Rhubarb crowns close together on this, putting soil between and a few inches above them. A "dug-out" may be formed in the absence of other means, and the hot-bed made therein, covering it with hoops and mats, and above these with bracken or long litter.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Pot Vines.—Vines not as yet started should be got in readiness forthwith, cleaning the house or pit in which they will be grown, white-washing the walls, and making the glass clear and bright, and seeing that the panes are sound, and there is no drip. A mass of fermenting leaves and manure should then be placed in the pit, and the Vines stood on pedestals of loose bricks, and plunged to the rims of the pots when the heat stands steady at 70°. The canes may be fastened to stakes temporarily close over the bed. Air in small quantities should be admitted night and day for a time; otherwise the moisture given off by the hot-bed will be too great, and in bright weather the canes may be sprinkled if they seem to be dry. A night temperature of 50° to 55° at the start, rising to 65° by day, will suffice. Close the vinery early after damping down.

Early Permanent Vinery.—The Vines from which ripe Grapes are required in May, should now be started after having thoroughly cleaned the Vines and the house. If mealy-bug be present on the Vines, remove the loose outer bark only, and wash the rods with soap-suds, then apply a thick coating of smooth clay two parts, coal-tar one part, and water sufficient to make it fluid; boil this in a saucepan till the ingredients are thoroughly incorporated; allow it to cool somewhat, and then apply it to every part of the old wood, especially about the cracks and holes around the spurs. When the Vines break, if a sharp examination be made daily of the rods, mealy-bug may be entirely eradicated in two seasons. To ensure this, however, hot-water pipes must be scrubbed clean; also woodwork, walls, glass, &c., and the crust of the border cleared out and replaced with new loam, &c. If mealy-bug be absent, it will suffice to wash the Vines with Gishurst-soap, at the full strength, recommended by the makers, adding to it a small quantity of flowers-of-sulphur. [We would advise caution with the use of Gishurst at the full strength, as injury to the buds has followed its use at this strength. Ed.] Apply warm with a brush. When the rods are dried, secure them to the rafters if they have often been forced early, but if they are young, secure them temporarily along the front of the vinery in a horizontal position to insure a regular break. The border should then be dug over lightly with a fork, and afterwards raked smooth, loosening it afterwards whenever it gets caked, taking care not to break any of the roots that may be running near the surface. Afford it a sprinkling of crushed bones and Thomson's or other vine manure, and over all a layer of turfy loam, to which soot, and lime-rubble in a small state are added, beating it with the back of a digging fork, and mulching lightly with stable-litter. The border, if dry, should have a heavy application of water at a temperature of 85°. Afford the Vines a night temperature of 50°, rising to 60° by day, and if

a heap of stable-dung and leaves be placed on a platform erected on the border, fire-heat may be spared at the beginning; and, moreover, the hot-bed will be useful for the forcing of Dutch-bulbs, Azaleas, Deutzias, &c. I would never have a plant in a vinery, but there are few places where the gardener is fortunate enough to be able to do this. As the foliage on succession Vines falls, pruning can be pushed on with, taking care to dress Muscats with styptic or knotting as soon as they are pruned; and on very aged Vines to lay in young canes wherever it is practicable. The repairs of all fruit-houses may now be undertaken.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Birtford, Dorking.

Mormodes, Catasetums, and Cynoches.—Many of these plants are showing flower-spikes, and although the new pseudo-bulbs at this time appear to have ceased to grow, the plants must not be removed to resting quarters before the leaves fall. Gardeners know that great numbers of these plants have been imported which, after blooming once or a few times, have, in many cases, dwindled away. The chief cause of this is traceable to the incomplete ripening of the pseudo-bulbs. In order to preserve such species, get them well ripened, and keep them in good condition year after year, the gardener should proceed as follows. As the plants go out of bloom, or have expanded the terminal leaf at the extremity of the pseudo-bulb without flowering, they should be removed from the East Indian to the Mexican-house, and afforded all the sunlight possible. Here they must be afforded plenty of water; and while the weather is bright, they will take water at the root almost every day, providing the potting-material dries quickly, and in dull weather they should be kept on the dry side. As the leaves commence to turn yellow, water must be gradually diminished, and if the pseudo-bulbs are well matured, no more will be needed by them for several months. If through lack of sunshine the pseudo-bulbs do not ripen, water will be needed occasionally during the resting season. After the leaves fall, the plants should be placed in a dry house, where the winter temperature is about 55°. If room can be found, the following species are well worth including in a general collection of Orchids:—*Catasetum tubulare*, *C. longifolium*, *C. barbatum*, *C. b. spinosum*, *C. scarrum*, *C. macrocarpum*, *C. saccatum*, *C. tridentatum*, *C. Christyanum*, *C. Bungeorothi* and its several beautifully distinct forms, as *Liudeni imperiale*, *aureum*, *punctatissimum* and *mirabile*; *Cynoches Egertonianum*, *C. versicolor*, *C. peruvianum*, *C. pentadactylon*, *C. chlorochilon*, *C. maculatum*, *Mormodes luxatum eburneum*, *M. buccinator* and its several distinct varieties, also *M. pardinum*, *M. p. unicolor*, and *M. Rolfei*. Strong plants of these species, after producing their first flower-spikes, will sometimes send out others, but it is advisable to pinch them off, otherwise the new pseudo-bulb may shrivel and fail to mature.

Dendrobiums.—All of the deciduous and semi-deciduous species of *Dendrobiums* now resting should be placed in a moderately dry cool-house, exposed to full sunshine, and well ventilated on warm days. It is advisable to look over the plants once or twice a week, affording water only to those which exhibit the least shrivelling. Such varieties as *D. Bensoniae*, *D. Parishii*, *D. crepidatum*, *D. cretaceum*, *D. primuminum*, *D. superbum*, *D. Pierardi*, *D. Dalhousianum*, *D. fimbriatum*, *D. calceolus*, *D. clavatum*, *D. albo-sanguineum* should not be removed to the cool resting house when growth is completed, but be placed at the coolest end of the East Indian or warmer part of the Cattleya-house during their period of rest. *D. Parishii*, *D. Bensoniae*, and *D. albo-sanguineum* should be kept quite dry whilst at rest, but the other varieties mentioned above must have water whenever the slightest shrivelling of the pseudo-bulbs is remarked. All *Dendrobiums* that are in full growth should be encouraged to make strong flowering stems. *D. Brymerianum* should be kept in the Cattleya-house at all seasons, as when grown in strong heat the plant deteriorates. The closely-allied species, *D. Harveyanum*, thrives best in the cooler part of the stove. Plants of *D. thyrsiflorum*, *D. densiflorum*, *B. Schroderi*, *D. Griffithianum*, *D. suavisimum*, *D. chrysotoxum*, and *D. Farmeri*, which are practically evergreen, have finished their growth, and should be removed to a light position in the intermediate house, but not dried off like the deciduous species, but afforded water occasionally so as to keep the foliage green and the pseudo-bulb plump. *D. sulcatum*, *D. macrophyllum*, *Richardi*, and *D. m. Veitchianum*, should be kept in an intermediate-house all the year.

PLANTS UNDER GLASS.

By G. H. MAVOROCK, Gardener, Luton Hoo Park, Luton.

The Propagation of the Tree-Carnation.—The autumn propagation of these varieties of Carnations results in plants of good size being obtained within a year from the time the cuttings are taken, and consequently an abundance of flowers. Many gardeners, myself included, strike Tree-Carnations from cuttings taken in the spring, and obtain plants of a useful size in this way, which usually have got into 5-inch pots by the end of the summer. These small plants are excellent for filling vases, and in other kinds of room decoration; but larger plants, and those which will give a lot of flowers for cutting, are raised from autumn-struck cuttings. These plants receive their final shift into 7 and even 8-inch pots. The cuttings should consist of growths that are of a moderate degree of firmness, with a heel; or if at this date the shoots or growths are wiry and hard, cut them at a joint, and place them round the edges of a number of 60's or small 48's, in a mixture of half leaf-mould and half sand, affording a thorough application of tepid water, and afterwards applying water with great caution. After the water has drained away, plunge the potful of cuttings in a frame having a bottom-heat of 65°, potting the cuttings singly as soon as they have as many roots as will support them. The cuttings should be turned out of the pots about six weeks from the time of placing them in the

at the roots, which will have the effect of resting them, and enabling a good start to be made in January. A temperature of 45° by night, and 50° by day, is high enough for the *Cliveia* in the winter.

***Schisanthus sinuatus* and *S. retusus*.**—These plants should be placed on a shelf, near to the glass in the greenhouse, and the stems secured loosely to neat stakes. Afford the plants no manure; but means should be taken to let them have plenty of ventilation, or damping will occur.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

***Gladiolus gandavensis*, *Nanceianus*, *Lemoinei*, &c.**—The leaves of these plants having matured, the corms may be lifted and laid out in a shed for a few weeks, until the tops part readily from the corms, when the latter should be stored out of the reach of frost in bags or drawers until the spring, or they may be hung up by the stems without removing the adherent soil. Some varieties, as the *Colvillei*, *Byzantinus*, and the old *Brenchleyensis*, may be left in the ground if this be convenient, as they withstand the frosts of an ordinary winter unharmed, if they are planted not less than 4 inches deep; in the event of frosts of more than ordinary severity, some litter or coal-ashes spread over the ground beneath which they are lying, afford sufficient protection.

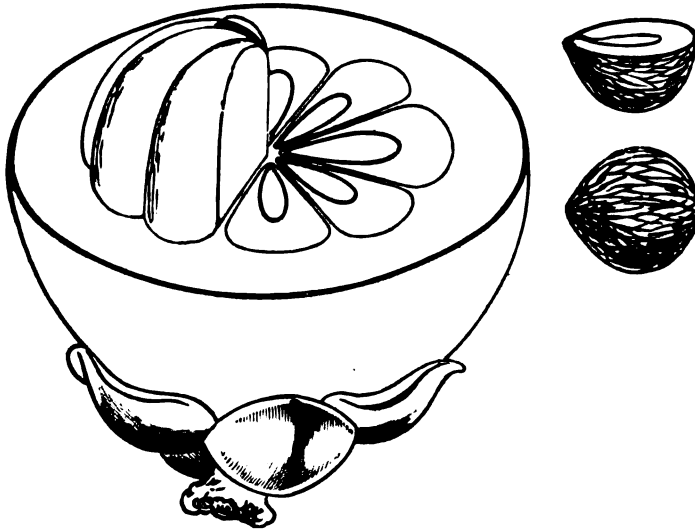


FIG. 97.—THE MANGOSTEEN: SECTION OF FRUIT. (SEE P. 324.)

frame, when most of them will be found with plenty of roots for potting, and those which are not rooted should be dibbled into fresh pots, filled with the same sort of soil, made warm to receive them. The chief danger to guard against in striking Carnations in hot-bed frames at the winter season is damp; but losses from this cause may be averted by maintaining sufficient top-heat (65°) by means of linings or hot-water pipes, and affording a trifling amount of air day and night; it will soon be seen how much the cuttings will bear without flagging. If the sun should shine, a good deal may be afforded for a quarter of an hour. A damped cutting should be removed as soon as noticed, or it will very soon cause decay in others.

***Cannas*.**—All of those which were potted last spring, and have ceased to throw up flowering-spikes, should be afforded less water, for, although *Cannas* will continue to bloom if liberally treated for some time still to come, it is advisable not to prolong the flowering season too much. After the foliage has fallen, sufficient water is needed to keep the rhizomes plump. The plants should be afforded the protection of a greenhouse or a greenhouse-pit during the winter.

Seedling *Cyclamens*.—As soon as the plants have made one true leaf, and can be handled, they should be pricked off into shallow pans, and placed in a pit or house having a warmth of 55°, and near the roof-glass. On warm days spray the plants with tepid-water.

***Imantophyllum (Cliveia) miniatum*.**—The foliage should be cleaned by the use of sponge and warm water, and the pots and soil kept free from con-ferna. At this season much less water will be needed

Tuberous Begonias should be lifted with some of the soil attached, and laid close together in boxes, storing these under a greenhouse-stage or other cool situation, but protecting them from drip.

***Half-hardy Plants*.**—The specimens of *Fuchsia*, *Cassia corymbosa*, *Hedychium*, *Abutilon*, *Aloysia citriodora*, and other plants used in sub-tropical gardening, should now be taken up and potted, and afterwards placed under glass. *Hedychiums* that are still throwing up spikes of bloom may be placed in a warm greenhouse, to unfold their agreeably fragrant flowers.

Propagation of Own-root *Roses*.—A simple means of increasing *Roses* in this form may be practised at this season. Choose a border with preferably the west aspect, and a soil that is moderately light and well worked. If good strong cuttings of ripened shoots, 1 foot to 9 inches, and taken off with a heel, be inserted, a goodly percentage will form roots by the spring. It will suffice if two eyes or buds range above-ground, and all should remain and not be cut out as in making Gooseberry cuttings. The heel of old wood should be thinned down, not put in just as stripped from the plant. Having dug the soil and trodden it firm, and raked it level, proceed to open a trench at one end, cutting this with an almost perpendicular side; and in this strew a small quantity of sand or sandy soil, and proceed to lay in the cuttings against the soil at 6 inches apart, pressing the sand, &c., around the cuttings, and over this putting a little of the soil, and making this firm also. Then fill in the trench with the spade, tread gently along the row, level the surface, and pass on to the next row, and so on till the cuttings are inserted. The rows should not be closer together than 12 inches—a

distance that permits of some amount of growth being made next summer without undue crowding, and of a man trampling the soil firm when loosened by frosts. Many varieties of H.P. strike readily in this manner, as do most of the climbing *Roses*, as *Boursault Prairie*, *Ayrshire*, *Polyantha*, *Madame Despres*, *Crimson Rambler*, *Innocente*, *Felicité*, *Perpetué*, and many others.

Rose Planting.—The present month affords a good time, if it be open, for planting any kind of *Rose*, and preparation for this kind of work should be made forthwith. Where existing beds of *Roses* have become impoverished, let the plants be lifted and laid in by the heels elsewhere; then, having cleared the beds, afford them a heavy dressing of rich manure and new loam if it be handy, and trench the soil two to three spits deep. Having done this, let it settle for a week, then trample it evenly all over, and proceed to plant, re-arranging the *Roses*, always affording ample space for development, and not planting them deeper than they were before. Before planting, trim the roots somewhat; remove all brood visible on the roots of worked *Roses*, and be sure that the roots are not crammed into holes too small to hold them. Make the ground firm about the roots, drawing a little of it conewise round the stem. New *Rose*-beds must be treated similarly, but loam in good quantity should be used if the soil be light, and the more clayey the loam is the better, removing some of the staple to make space for it. If the drainage be good, it rarely happens that a heavy soil requires making lighter; but if it be very tenacious, burnt earth, leaf-soil, and road-sand are capital substances wherewith to lighten it. Although planting may be carried out at any time in the winter when there is no frost in the ground and the weather is mild, the present month and March are the best seasons. All *Rose*-beds that have been replanted, and new beds, should be mulched before the frost has had time to enter the soil. A selection of varieties will be given in my next Calendar.

THE APIARY.

By EXPERT.

Food for Bees.—The following is a recipe for soft candy: (1). Use preferably a brass jelly or preserve-pan, otherwise an enamelled-iron or plain-iron one. (2). Put in 10 lb. of white granulated sugar at 2d. or 2½d. per lb., 2 imperial pints of cold water, and half a teaspoonful of cream-of-tartar; (3). Set on, or hang over a brisk fire, and stir up gently now and then till the sugar is all melted; this should require about fifteen minutes. (4). Almost immediately afterwards the whole will reach the boiling point, at first throwing up a deal of froth. The fire may be moderated or the pan withdrawn a little at this stage, when the foamy boil will settle down to a clear crackling one; this boiling should only occupy about two minutes. (5). Now let a drop fall on a cold surface, withdrawing the pan from the fire in the meantime. If the drop at once begins to set, so that in a few minutes it will draw out as a thread when touched with the finger, the mass is cooked enough. If not, boil a few seconds longer, and try again. (6). Remove the pan from the fire, and set it in a trough of cold water. It may be left there for a few minutes, while the moulds (flat or soup plates will do) are being set ready, each with a thin sheet of paper rather larger than the mould laid in. Returning to the pan, commence and continue to stir briskly, until the mass begins, first to get dim in colour from incipient granulation, and then to thicken to the consistency of thin porridge. Then pour into the moulds, warming the remainder slightly to get it to leave the pans. This cooling and stirring process should take about fifteen minutes more. (7). Thus, in about thirty-two minutes, we finish the whole process, with the result that we have 12 lb. of candy from 10 lb. of sugar. The cakes should set within an hour, so as to be safely turned out of the moulds. When quite cold they should still be soft enough to be easily scratched with the fingernail, and to melt in the mouth with a soft grain. (8). Bees never hibernate in the full sense of the term. They will be found even in the most severe frost, ready to move as soon as sunlight is shed on them. All stocks need preparing for the winter without delay, because bees that are packed in early autumn, generally speaking, commence breeding earlier and come out stronger in the spring than those that are disturbed late in the year, by feeding and packing. See that all hives have a good number of bees in them, and a young queen at the head of the colony, together with an abundance of food. These items secured and the bees housed in a hive that is waterproof, the bee-keeper will have but little to do or think of in relation to his apiary for the next four months.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Nov. 9	Royal Hort. Soc. Coms. National Chrysanthemum Society's Show at Aquarium (three days). Chrysanthemum Shows at Leeds, Kingston, Birmingham, Croydon, Bromley, and Farnham.
WEDNESDAY, Nov. 10	Chrysanthemum Shows at Liverpool, Eastbourne, Carlisle, Hanley (Staffs.), Brixton, Great Yarmouth, and Bournemouth. Harrison & Son's Show of Vegetables and Farm Roots, at Leicester.
THURSDAY, Nov. 11	Chrysanthemum Shows at Putney, Hammersmith, Spalding, Tunbridge Wells, and Winchester.
FRIDAY, Nov. 12	Chrysanthemum Shows at Sheffield, Wilmalaw, Windsor, and Bradford.

SALES.

MONDAY, Nov. 8	Bulbs, at Protheroe & Morris' Rooms. Bulbs and Plants, at Stevens' Rooms.
WEDNESDAY, Nov. 10	Bulbs, at Protheroe & Morris' Rooms. Lilies, &c., at Protheroe & Morris' Rooms. Bulbs and Plants, at Stevens' Rooms.
THURSDAY, Nov. 11	Bulbs at Protheroe & Morris' Rooms. Bulbs and Plants, at Mr. Stevens' Rooms.
FRIDAY, Nov. 12	Bulbs and Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—43° 3'.

ACTUAL TEMPERATURES:—

LONDON.—November 3: Max., 52°; Min., 46°.

PROVINCES.—November 3 (6 P.M.): Max., 50°, South-west Ireland; Min., 45°, East Counties.

Autumn versus Spring Digging.

THE subject of digging will be in the minds of many horticulturists at the present time, and the younger members of the "fraternity" will do well to study the respective advantages of performing this operation in autumn and spring. It is a more important matter than appears at first sight, because modern investigation has thrown a fresh light upon much connected with the soil and the conservation of its properties. It is always unpleasant to be compelled to recognise mistakes, but when a practice is proved to be erroneous or wasteful, it is wise to alter our course, as a good deal of success in life depends upon the readiness with which new ideas can be assimilated in regard to our work or duties.

For a large number of cultivated plants, the supply of nitrogen is of the utmost importance, and this is obtained chiefly from the nitric acid of soluble nitrates derived either from applied manures or from decomposing substances already in the soil. During the summer months, and with a due amount of moisture

present, the production of these sources of nitrogen proceeds continuously and at a much greater proportionate rate of increase than in the winter. The constant stirring of the surface by means of hoes or other instruments in the warm months considerably accelerates the formation of the compounds named, by the admission of air that aids in the work of breaking up insoluble substances. Thus, if a piece of ground is unoccupied by a crop during the summer, and it is attended to in the surface-stirring mentioned, there is by the time autumn arrives a material increase in fertility. Even if it be occupied by a crop, unless it be a very exhausting one, or close planting is adopted, there may be some accumulation if the land has been previously well manured. At any rate, the actual loss by drainage will have been small, because the roots of the plants will have appropriated all within their reach.

In the autumn and winter, however, the condition of affairs is reversed; so long as the soil continues warm, and not over-saturated with water, the nitric acid formations will continue, though in a lessening degree, until in the winter very little indeed is produced. Then, too, we have the greatest waste going on, particularly in a wet season; the compounds formed during the summer are rapidly washed away if the soil is not occupied with a crop, and we have to make up this loss by the addition of costly manure, or the land becomes impoverished.

Regarded, therefore, solely from the point of view of naturally increasing the fertility of the soil, we know that in digging ground in spring or summer we are certain to gain, while the same operation in autumn or winter will as certainly lead to some loss of the constituents, and perhaps in a great degree if the winter prove to be wet. In both cases this is assuming the ground to be unoccupied—but in few gardens can ground be allowed to lie fallow for several months; therefore it only occurs when a crop is removed in the autumn too late to put anything else on it. Then if it has to wait for a crop until spring it would be economical to defer the digging until spring. Appearances must, however, be studied in a garden, and a well-dug piece of ground looks much better than a bare plot. Beyond this, an ordinary rich garden soil that has been in cultivation for many years contains such a superabundance of humus that the winter loss is not a very serious matter, as it is soon made up by decomposition.

The mechanical advantage of autumn digging when dealing with rough and heavy ground cannot be questioned, as whatever loss may be sustained by drainage is more than compensated by improved workable condition of the soil, while the more ready escape of water increases the warmth of the soil. Heavy ground that has not been under good cultivation, dug roughly in autumn, and exposed to winter frosts, will be in a better state for planting in the spring than three times the labour could effect at that time. The rough exposure of ground to the frosts also has a tendency in a severe winter to greatly reduce the insect-pests which find shelter in the soil. Therefore, as in everything connected with horticultural work, a considerable amount of judgment is necessary, and a balancing up of advantages and disadvantages.

The subject has, however, a wider bearing than garden culture, for it affects the larger areas of land devoted to fruit plantations, and in these the pecuniary aspect is a serious matter. If a permanent plantation be formed

with considerable spaces between the lines of trees not occupied with bush-fruits or Strawberries, the continual cultivation of such spaces without cropping must result without manurial addition in gradually impoverishing the soil into which the roots of the trees are advancing. That this loss is increased by autumn digging there is no doubt, and against it we have to set two advantages, namely, the amelioration of heavy soil by exposure to weathering, and the fact that there is not the same demand for labour in other ways in autumn and early winter as in spring. There is an alternative method, and that is to crop the ground throughout the winter, the roots of the plants grown will then appropriate the soluble nitrates accumulated during the summer, or at least materially diminish the loss of drainage. A growing crop will further aid in drying the soil, as the evaporation from vegetation, even during the winter months, is greater than might be imagined. If a crop can be so grown that is saleable, if it will only pay for the labour and manure required, it will be a gain to the cultivator because it is keeping the land in good heart, and no crop can be grown without adding something in the form of humus to the soil. In districts or seasons when the intermediate crops cannot be sold, the course adopted by large growers and advocated by great authorities in America is to dig or plough them into the land. It is even contended that it is more economical to allow the land to become covered with weeds and dig these in early in the year than to dig the land in autumn, and leave it bare for winter. This is carrying a principle too far, for many of the smaller weeds will, during a mild winter, continue bearing seeds, and are thus laying up a store of work and trouble that only those can properly estimate who have had to deal with weedy and neglected land.

The storage of humus in soil is an important matter beyond all doubt, but it only gradually restores to land what the crops have absorbed. Sir JOHN LAWES says:—"Humus (in which term I include all vegetable matter in a state of decay) is very insoluble in water; but sooner or later it assumes the form of nitric acid, which combines with lime or other alkaline substances in the soil, and then becomes very soluble in water. These compounds rise and fall with the water in the soil, coming to the surface in dry weather, and passing into the drain, in the absence of growing vegetation, in wet weather. When a crop is in the full vigour of growth, the soil-water may contain more or less nitrate. Being soluble in water, and entering into no combination with the soil, nitrate cannot accumulate. Each year fresh nitrates are formed from the decomposition of the humus, the fertility of the land depending largely upon the amount of nitric acid liberated every year. What we call condition is so much added to the stock of organic matter which in the course of a few years is decomposed, yielding nitric acid and mineral substances.

Such cropping as is here referred to is, however, only applicable to fruit plantations where the spaces around the tree-stems and over the roots is kept entirely free from vegetation. Growing vegetation of any kind close up to the stems of trees can only result in injury, because the vegetables appropriate what is available for the trees; it is not possible to dig the surface-crop in, and it must be left there to yield, in very slow degrees, what was already at the service of the trees.

Summarising the whole matter briefly, it will be seen that autumn digging should always, where possible, be followed immediately by a crop of some kind. Without that there is a certain, though variable, loss of nitrogen-yielding and other compounds during winter. In gardens and in improving heavy soils, this loss is counterbalanced by other advantages, but in larger areas of land, such as fruit plantations, it is more economical either to crop the land or to leave the digging until spring.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, November 9, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. A lecture on "Roots" will be given at 3 o'clock, by Prof. F. W. Oliver, D.Sc.

THE ROYAL GARDENERS' ORPHAN FUND.—At the first meeting of the Committee of the Royal Gardeners' Orphan Fund since the recess, held on the 29th ult. at the Hotel Windsor, Mr. W. MARSHALL presiding, the receipt of a bequest was announced from J. W. THOMSON, late nurseryman, Hayward's Heath, £457 5s. 11d., which is to be known as the J. W. THOMSON bequest, to be forthwith invested, and the proceeds to be devoted to the purposes set forth in the will of the testator. Also the following donations, for which the special thanks of the Committee were accorded:—

Rev. A. Lowe, Rangemore, Burton-on-Trent, £ s. d.		
proceeds of collection at harvest festival	6	1 6
Sandringham Cottage Garden Society	5	5 0
Wimbledon Horticultural Society, sale of flowers	5	0 0
Uckfield Chrysanthemum Society	3	3 0
J. Selway, Bottesanger	3	0 0
Per J. Roberts, Local Secretary, Ramsgate	2	1 0
Forest Hill Horticultural Society	1	10 0
Hessle and District Horticultural Society	1	4 8
Bradford Paxton Society	1	2 6
C. Herrin, Maldenhead	1	0 0
G. Carpenter, Wyke	0	10 0
J. Dunkin, Warwick	0	10 0
M. Kneller, Basingstoke	0	8 0

It was decided to hold the annual meeting at Anderton's Hotel, Fleet Street, early in February, when the election of children to receive the benefits of this fund will take place. Some other details of business having been gone through, the meeting concluded with the usual vote of thanks to the Chairman. The necessary nomination forms may be received on application to the Secretary.

THE LINDLEY MEDAL.—This medal was instituted in commemoration of the invaluable services rendered to horticulture in general, and to the Royal Horticultural Society in particular by the late Dr. LINDLEY. It was to be given preferentially for excellence in cultivation. If we are right, there have only been two gardeners thought worthy of this distinction since the medal was first instituted, viz., the late Mr. T. BAINES and Mr. JAMES ANDERSON. Can it be possible that no cultivators of equal rank have come to the front during the last thirty years? or has the Society forgotten its functions?

THE LATE PROF. BABINGTON.—We have to announce the publication by Messrs. MACMILLAN & BOWES, of Cambridge, of the *Memorials, Journal, and Botanical Correspondence of Charles Cardale Babington*, formerly Professor of Botany in the University. We shall take an early opportunity of advertising to this important book.

HORTICULTURAL CLUB.—The usual monthly dinner and conversations will take place on Tuesday, November 9, at 6 P.M. The subject for discussion will be "Lilies and Lily-diseases," to be opened by Mr. G. MASSEY, President of the Mycological Society.

SIR RUTHERFORD ALCOCK.—The death of this distinguished servant of the Crown removes from us one who added a love of botany to his other qualifications as a doctor, a military man, a diplomatist, and a governor. Horticulture and botany are under great obligations to him for the discovery and introduction of plants from Japan and other countries. The researches of JOHN GOULD VITCH were much facilitated

by Sir RUTHERFORD at a time when travelling in Japan was not so easy as it is now. *Picea Alcockiana* and other plants will serve to perpetuate his memory.

A GARDENER'S BRAVE SON.—It may interest our readers to learn that the brave piper, PATRICK MILNE, of the Gordon Highlanders, who sat up on his haunches, and continued playing his pipes after being shot through both legs, and amid a perfect hail of bullets, is the son of Mr. WILLIAM MILNE, gardener, Waterside, Newburgh, Aberdeenshire. Mr. MILNE is now well advanced in years, but still bears evidence of having been a man of powerful frame and athletic build.

THE LINDLEY LIBRARY.—It is interesting and decidedly satisfactory to see what are the books that have been in most frequent demand at the LINDLEY Library during the last year or two. FOSTER-MELLIAN'S *Book of the Rose* heads the list, closely followed by Miss ANHEEST'S *History of Gardening*. Next come Mr. BARRON'S *Vines and Vine-Culture*, Canon ELLACOMBE'S *Plant Lore of Shakespeare*, Mr. McDONALD'S *Sweet-Scented Flowers and Leaves*, and various works on *Fruit Culture and Vegetable Physiology*. Books that cannot readily be replaced are not lent, but it seems desirable in the interest of students and young gardeners that duplicates of text books and books in common demand should be added to the library, and it is very desirable that the funds at the disposal of the Trustees should be augmented largely.

NORFOLK COUNTY COUNCIL.—We are informed by Mr. G. W. CLARKSON, of the Clarkson Nurseries, Wisbech, that he has been appointed lecturer on horticulture by the Norfolk County Council.

GARDENERS AND WORKMEN AT THE ROYAL BOTANIC.—We learn that the working hours of the gardeners and others employed in the Royal Botanic Gardens, Regent's Park, have, owing to the endeavours of Mr. J. B. SOWERBY, the secretary of the Society, been assimilated to those current in the parks under the control of the London County Council and the Royal parks.

THE PRESENT SEASON has been remarkable up to the present for its mild weather. Pelargoniums, Dahlias, and other plants are still in bloom in many localities, being uncut by severe frost. We have received evidence from numerous correspondents to this effect, and before us is a box of flowers received from W. H. MAXWELL, Esq., Munches, Dalbeattie, Kirkcudbrightshire. These were gathered on October 30, at Bergairn, in the same neighbourhood, and about 2 miles from the sea, on the north shore of the Solway Firth. The box includes fresh flowers of Dahlias, *Anemone japonica*, *Calecarias*, *Begonias*, *Myosotis*, *Papaver orientale*, *Tropaeolum peregrinum*, *Clematis*, *Veronica salicifolia*, and other species. The circumstance is certainly noteworthy. Messrs. DOBBIE & Co. had also Dahlias and French Marigolds in full beauty at Orpington on November 1.

CONTINUITY OF PROTOPLASM.—In days not long gone by, students used to be taught that the cells of which plants are composed were closed bags, and that if any transfer of fluid from one to another took place, it was from osmotic action, or from a sort of oozing through the wall of one cell, and permeation through another. Mr. WALTER GARDINER, of Clare College, Cambridge, however, demonstrated the fact that there is in many cases an actual passage of extremely fine threads of protoplasm of one cell into the cavity of another, as occurs in the so-called sieve-tubes. Thus, the whole plant forms one whole instead of being made up of independent cells. Mr. GARDINER'S observations were confirmed and extended by others, so that the notion of the continuity of the protoplasm is now generally accepted. The bearing of these observations on the phenomena of variation, "sporting," graft-hybridisation, &c., is obvious. Mr. GARDINER, in a recent number of the *Proceedings of the Royal Society*, published on October 29, 1897, extends his former ob-

the case of the pitted-cells, which are so common in the structure of plants, the membrane which closes the pits is invariably traversed by threads of protoplasm. Other threads traverse the cell-walls, where there are no pits. These threads, it may be presumed, fulfil two purposes—the transmission of stimuli or influences (as in the case of the nerves of animals), and the conduction of food.

MR. BULL'S NURSERY.—It will be seen from our advertising columns that Mr. BULL has sold for building purposes the land occupied by his branch establishment at Ashburnham Road, Chelsea. The consequence is that a very large and very interesting collection of Orchids and other plants will be offered for sale by auction. Mr. BULL proposes in future to devote his attention exclusively to his old establishment for the introduction of new plants, &c., in the King's Road, Chelsea.

"THE FERN BULLETIN."—No sooner does any plant or group of plants become popular, than one of two things happens, or generally both. The one is the publication of a special journal, the other is the formation of a special society. Specialism is one of the characteristics of the time. It has its objectionable features, no doubt; but it has become a necessity, and we must make the best of it. One way of doing this is by securing, as far as possible, a good general all-round knowledge before diverging into a specialty. *The Fern Bulletin*, edited by Mr. WILLARD N. CLUTE, and published at Binghamton, New York, would not be so good as it is, were it conducted along the narrow groove of specialism without looking over the boundaries to the great world beyond.

LYCORIS AUREA.—From Mr. E. H. WOODALL we have received a fine truss of this old Amaryllid. The individual flowers were about 3 inches long, the perianth segments rather broad and reflexed, and of a rich golden-yellow colour, with projecting stamens and style. It is said to be a native of China, and was introduced so long ago as 1777, though it is not often seen in gardens. *Lycoris*, as a genus, differs from *Hippeastrum*, by having only a small number of seeds in each compartment of the ovary.

PARIS EXHIBITION, 1900.—Already the committees for the Exhibition are constituted. Group VIII., as we learn from the *Moniteur d'Horticulture*, comprises Class 43, devoted to horticultural material and practices; Class 44, kitchen-garden; Class 45, fruit and fruit-trees; Class 46, trees, shrubs, flowers, and decorative-plants; Class 47, stove-plants; and Class 48, seeds. The interests of each of these classes are to be served by a committee containing many distinguished horticulturists well known and appreciated on this side of the Channel.

M. DE PANNEMAER.—The well-known botanical artist of Ghent was recently entertained by his colleagues and friends on the occasion of the twenty-fifth anniversary of his entry as teacher of drawing at the Ghent School of Horticulture. An album containing portraits of his colleagues and pupils was presented to him, whilst the Government recognised his services by conferring on the artist the Civic Medal of the First-class.

TEMPERATE-HOUSE, ROYAL GARDENS, KEW.—We are informed by Messrs. MACKENZIE & MONOUR, Ltd., that they have been entrusted by H. M.'s Board of Works with the completion of the Temperate-house in the Royal Botanical Gardens, Kew, by the erection of the North Wing. The house is to be constructed with iron girders, and teak-wood window-sashes and sash-bars. It is expected the work will be completed in twelve months.

PATENTS.—The Patent Laws of this country make no provision for an official search as regards novelty, and all patents are taken out at the risk of the inventors. It is, therefore, incumbent on any person desiring to obtain a valid patent for an invention either to cause a search to be made, or himself to make a search, as to the novelty of his invention

By omitting such a search, many a patentee has found, after paying his fees, that his treasured patent is worthless, because it has been anticipated. Of course, in this case the first applicant or patentee possesses all the patent rights, and the second one has absolutely no rights at all. A complete and exhaustive search through published specifications of patents is a task of considerable difficulty, even for the trained expert, with all the resources of the Patent Office Library, for at this moment the number of printed specifications of patents is well over a quarter of a million. A series of indexes and abridgments has been published by the Patent Office as a guide to the specifications themselves, and is freely distributed to the principal public libraries in this country. The abridgments give a general description of the nature of every invention patented, and the object of their publication is to enable the would-be patentee to carry out, at any rate in some cases, what may be termed a "fireside search." By the study of these abridgments he will generally be able to select certain inventions which have already been patented, and which resemble his own invention sufficiently to render it desirable for him to examine their specifications in detail. A printed copy of any specification can be obtained at an inclusive price of 8d., through any post-office, by a special post-card (Patents Form C¹). The abridgments are published in volumes, each volume dealing with one particular class of inventions, such as "Steam-engines," "Cooking and Kitchen-appliances," &c., for a period of some years. The volumes up to 1877 are not illustrated, and all the subjects have not yet been dealt with; but from 1877 onwards a systematic series, very fully illustrated, is now in course of publication at a uniform price of 1s. per volume (including inland postage). The volumes from the periods from 1877 to 1883, and from 1884 to 1888, have been completed; those for the periods from 1889 to 1892, and from 1893 to 1896, are in active preparation, and later volumes will follow in due course. For the purposes of the abridgments the whole field of invention has been divided into 146 "Abridgment Classes," and the list of these classes in itself shows what an enormous field this is, and how greatly its products vary. Every triumph of applied science, such as the locomotive, the telegraph, and the dynamo, is to be found here, and every one of our great national manufactures and industries finds its appointed place. Each volume contains abridged descriptions of the inventions falling under one of the 146 classes during the period of which it treats (illustrated by diagrams or drawings wherever possible), a detailed index to the inventions according to their subject-matter, and an index to the names of patentees or applicants. For the use of those who desire to make a careful study of patents, the Patent Office also publishes an "Abridgment class and index key" (price 1s., parcel postage 5d.), which show in detail how inventions are classified, abridged, and indexed throughout its publications.

PRESENTATION TO MR. D. BROUGH.—At the "Kirkhouse Inn," Strathblane, N.B., on the evening of the 2nd inst., Mr. BROUGH, who has for the past five years had charge of the gardens and grounds of Sir ARCHIBALD EDMONSTONE, Bart., at Duntreath Castle, and who is now about to resign the charge there, was made the recipient of a handsome dining-room clock by the committee of the Strathblane Horticultural Society, the garden staff at Duntreath, and a few friends and well-wishers. Mr. LOVE, in making the presentation, paid Mr. BROUGH a high tribute for the manner in which he threw himself into the work of the Strathblane Horticultural Society, his attention to duty, and his straightforwardness. During these five years the finances of the Society had about doubled themselves; that again was due in a measure to his energy. He had much pleasure in asking Mr. BROUGH to accept this small token of the respect and esteem with which he was held by a very wide circle of friends. Mr. BROUGH, in a few suitable words, thanked those present for their beautiful gift presented to him, and for their good wishes and kind sentiments.

HOME CORRESPONDENCE.

PHYSALIS FRANCHETTI.—Seeing in your issue a note respecting the non-ripening of *Physalis Franchetti*, and having grown a large number successfully, perhaps a description of my methods would be acceptable to your readers, for it is a plant that may be grown by everyone. First, snails are very fond of it, and care should be taken to prevent it being eaten by these creatures when just coming up; it requires a good deep, rich soil; and towards July it should have some of the shoots thinned out, also some leaves removed thus exposing the calyces to the sun. By carrying out these directions I feel sure that these will ripen well almost anywhere in Britain. I send a calyx to show the size to which they grow with me, and to the number of eight to ten on a stem. It is quite dwarf as *P. Alkekengi*.—*J. P., The Ericas, King's Norton.*

THE R.H.S. AWARDS OF MERIT.—Would it not be well for the Royal Horticultural Society to make a change in the system by which the Awards of Merit are frequently made? I am referring to a case where two or more growers exhibit the same variety of plant or flower, and each share the honour. Would it not be better that the award be made to the best specimen? I will illustrate a case. On October 28 I placed before the Floral Committee of the National Chrysanthemum Society blooms of the *Chrysanthemum Lady Ridgway*, to which a F.C.C. was awarded. Some one connected with another firm of growers gathering that these same blooms would be placed the next day before the Floral Committee of the Royal Horticultural Society, also sent blooms of the same variety, and although these said blooms would undoubtedly have been passed by the committee, they being only one-third of the size of those I exhibited, the firm share equal honours with myself, who really won the Award of Merit, *W. J. Godfrey, Exmouth*. [Surely one certificate is enough, the repetition of them is becoming ridiculous. Ed.]

BLACK CURRANTS.—The Black Currant will grow in almost any kind of soil, but that which is deeply worked and well enriched with rotten manure suits them best. If the bushes were planted carefully at about 4 to 5 feet apart, they should be kept within reasonable bounds by the free use of the knife. I like to go over the bushes soon after the fruits have been gathered, and (where unduly thick) give the branches a good thinning out. Only a short time since, I observed Black Currant bushes, that were pruned on the spur method, like Red and White Currants. The yearly addition of plenty of strong young shoots should be the aim of the cultivator of Black Currants. In the case of old bushes, I have seen the entire cutting down of the heads practised, and with very satisfactory results, numerous shoots springing up from the base, which fruited abundantly for some years afterwards. Still, the best practice is to plant fresh bushes to take the place of those that are worn out. Baldwin's Black is a very heavy cropping variety, and a favourite with many; Black Naples is also an excellent one. *H. Markham.*

GARDENERS' SUPPLANTERS.—Judging by what one hears from time to time, there must be many imitators of the biblical supplanter Jacob amongst the gardening fraternity. Personally, I can enjoy a fair contest on any principle or point of gardening practice without feeling the least ill-will against my opponent if I am worsted. No doubt some of the numerous readers of the *Gardeners' Chronicle* will understand my point. I allude to the covetousness of those who, by unfair means, try to supplant a fellow-gardener who may seem to them to be in difficulties. Most of us are well aware of the necessity for prompt and energetic action on the part of anyone seeking a situation. To say the least, however, it shows bad taste when an applicant for a situation neglects to find out the truth of the matter before applying, as it may happen that it is not vacant. I fear it will have but little effect on these persons to know that situations gained by such means often bring misery in their train. These thoughts have been uppermost in my mind for some time, and to-night's post brought me two letters from distant friends, both telling me of a case bearing on this subject, which has occurred quite recently. The gardener whose post was likely to become vacant, is practically a stranger to me. Some evil-minded person started a report that he was dangerously ill; and in a short space of time, his employer received numerous applications for the situation. One of my correspondents met this gardener last week looking round a well-known garden in the vicinity of

London. He was then some 200 miles from his home, which is in Wales, and he seemed well and strong for his age. It may be mentioned that he has held his present post for over thirty years, and I am assured that he enjoys the full confidence and sympathy of his employer. *Overhanded, October 30.*

PLUM COE'S GOLDEN DROP.—I consider no wall devoted to the culture of Plums complete without the above most useful variety. The young trees perhaps do not fruit so freely as some kinds do, but when once they begin to bear, we have a Plum of great excellence. It has a property apart from its pleasing golden colour and high quality, which is not to be found in many of our juicy fruits, namely, the length of time it will keep in good condition after it has been gathered, if taken from the trees ripe and rolled up in thin tissue-paper, and placed on shelves in a dry fruit-room. A good west aspect invariably suits this variety, and if planted in good soil and well taken care of, the trees grow with great freedom. In fact, like most Plums, they are very apt to make too gross wood when in a young state. Many young trees are very frequently to be met with comparatively ruined, through not being kept checked by root-lifting, &c., in their early stages of growth. It might be argued that almost any soil will suit the Plum, but for walls I have always found it the better plan by far to prepare good soil for the roots, and this rammed firm; and should the trees break away into rank growth, check them by root-pruning. I often think the knife is wrongly used; instead of hard cutting the branches and shoots yearly, it would be better to cut the roots, and the latter I would strongly urge to be done at once where the trees are growing too strong to be fruitful. *H. Markham, Margate.*

MUSCAT OF ALEXANDRIA GRAPES.—In the *Gardeners' Chronicle*, October 30, p. 313, your correspondent, "B. W.," remarked that my letter was a trifle misleading. I should be very pleased if the writer would publish his experience in the *Gardeners' Chronicle*. I doing the same, then readers would be able to decide the matter. Airing is not only required in the summer and autumn, but from the time they are started, which, as a rule, is about the latter end of February or beginning of March. The Grapes about which I wrote took the 1st prize at Birmingham and Rugby shows, and I think that judges do not give 1st prizes to the worst exhibits. I cannot agree with "B. W." in saying that a double thickness of fish-net is not required if the airing is properly seen to. The way this letter reads is out of the treatment altogether, for to advise the putting on of a lot of air the first thing in the day is certainly misleading. The writer believes that Muscat of Alexandria can stand the hottest rays without shading. I am sure that the foliage of this variety flags sooner from strong sunshine than any other variety. It is not in the middle of the day that the foliage gets scorched, but the first thing in the morning when the sun is bright. If they are once neglected at this time, the damage is already done. Early closing is another practice that I do not hold with, and also syringing the Vines, because if the berries are wetted and the sun strikes them, the fruit gets scalded. And with early closing there is always the liability to scald. Therefore if "B. W." will publish his experience, I will do likewise. *A. Smith, Harewood House Gardens, Hendon.*

THE QUEEN'S DIAMOND JUBILEE.—It has occurred to me that it would be an interesting incident in this memorable year, to plant a group of sixty sapling Oaks in a suitable position in Hyde Park. [These trees do not succeed in London. Ed.] A group of Oaks would be a living monument of the auspicious occasion, and the group to be called the "Diamond Oaks." This suggestion is respectfully offered for the consideration of the London County Council, or the Park authorities; and were it adopted, I venture to assert that such a clump of these trees would be admired. On many estates, great and small, in this country, single trees in variety have been planted this year to commemorate the national event, but to plant sixty in one group in one of the London parks would, I think, be unique in character and appearance. This year of special interest, 1897, to the English people and the Empire, is now drawing to a close; still, there is ample time to carry out my humble suggestion, should it meet with the approbation of the authorities that be. *J. Gardner, Elsham Hall Gardens, Lincoln.* [It might be done at Windsor. Ed.]

A LAWN-SWEEPING MACHINE.—When on a visit to Petworth the other day, I saw one of Messrs. Sutton & Pull's lawn-sweeping machines at work, and

was much struck with its simplicity and the efficient manner it performed its work. Although there was a good lot of leaves, and many Chestnuts, the machine deposited them all in the collecting-box. It was being easily worked by two men, and the quantity of ground that they had swept with it proved what a boon it is to gardeners who have extensive lawns to keep tidy, as six men could scarcely have done the same amount of work with brooms in the time. Not only is it labour-saving, but the lawn, I thought, looked fresher than when swept with the broom. *H. Hereford.*

THE USE OF FLORAL LEAVES.—One has often heard the question put, "What is the object in Nature of the green leaves which we sometimes see developed at the base of the flower-cluster, at the upper end of the flower-stalks, of certain plants?" I have never heard any cogent or satisfactory answer given to the question, so I experimented on an outgrowth of that kind which manifested itself on the flower-stalks of some plants of *Primula farinosa* in my borders this summer. I pegged these flower-stalks down, on the method of pegging-down Strawberry-runners, and to-day I have taken them up as well-rooted offsets. This seems to prove that outgrowths of this kind constitute really a supplementary mode of propagation provided by Nature. By the way, I may observe that *Primula farinosa* with me proves to be a charming border-flower, blooming over a prolonged period, and affording a charming display of exquisite floral gems. It loves a magnesian-limestone soil. *G. Paul, 10, St. Mary's Avenue, Harrogate.*

YORKSHIRE APPLES.—I have read with interest Mr. Bunyard's paper on fruit-culture during Her Majesty's Reign; also the notes upon the non-competitive collections of fruit and flowers staged at the Royal Horticultural Meeting, October 1 and 2, which has led me to send samples of Apples that I have found to do well here for the last three years. Most of the trees from which these were taken were root-pruned in the autumn of 1893, and some of them slightly raised above the level of the surrounding ground; and they have since received an annual mulch of partly-decayed manure, and occasional waterings in hot, dry weather, and have twice been sprayed with sulphate of copper and lime in calm and mild weather in winter; 1 lb. of sulphate of copper and 1 peck of lime to 30 gallons of water. The trees of Warner's King, Bramley's Seedling, Tower of Glamis, Fearn's Pippin, King of the Pippins, Ecklinville, and Lord Grosvenor (of the two last-named I have no samples left), have borne regular and good crops, the trees having been planted four years ago. Small's Admirable, Stirling Castle, Domino, and Nelson's Glory promise well, and have given a good return for the last two seasons. Peasgood's Nonsuch, Blenheim Orange, and Annie Elizabeth, have borne regular but thin crops. The variety No. 10 has done well this year, it was grafted on an old stock of Golden Noble, and Cox's Pomona has borne well this year for the first time, being planted four years. Of Dumelow's Seedling I have only one tree, which is very shy, but generally it gives us a few useful late fruits. All the above are worth giving a trial in Northern gardens; the best for cooking being Lord Grosvenor, Domino, Nelson's Glory, Tower of Glamis, and Bramley's Seedling, which would give a supply of Apples from August till the end of April. Bramley's Seedling keeps sound and free from spotting, which is a common blemish in southern fruit of this variety. The best dessert Apples are Beauty of Bath and Irish Peach coming into use early, and Fearn's Pippin and King of the Pippins to follow. I am sorry not to be able to grow Cox's Orange Pippin. We want one as good that will finish its fruits well; can any reader recommend one, our garden being in the East Riding, 2½ miles from the sea-coast? I find several varieties of Apple shrivel here, and are useless, although left on the trees till very late. The ones numbered 13 for instance, I have left until the middle of November, but it never finishes fit for use. *Thomas Down, Wassand Hall, Hull.* [Cox's Pomona is a very fine fruit, although necessarily not of so high a colour as it comes in the south. Warner's King was 5 inches in width, and 3½ inches in height, a very fine specimen—of a weight of 19 ozs. Tower of Glamis was 4 inches in height and 4½ in width, an unblemished fruit—of this variety our correspondent informs us that he has fruits weighing as much as 1 lb. each. Annie Elizabeth was a perfect example, 3½ inches in height, and 4½ inches in width, of a weight of 10½ ozs. The fruit of Bramley's Seedling was 3½ inches high and 4½ inches wide, and of a weight of 18½ ozs. Blenheim Orange was a fine, high-coloured fruit, approaching ripeness; as was likewise Peasgood's Nonsuch, a fruit measuring 3½ inches in height, weighing 12½ ozs. Nelson's Glory was a nice-looking fruit of full size; as was also Norfolk Beauty. King of the Pippins and Fearn's Pippin were of fair size, and nice-looking fruits. Our correspondent does not volunteer the information, but we take it that the trees from which the fruits were taken were espaliers or bushes. In any case, they show in a very striking manner what excellent Apples can be grown in Yorkshire with the proper degree of attention in regard to shelter and providing suitable stocks, to root-pruning, thinning, and surface-feeding. In the matter of development, these fruits leave nothing to be desired. *Ed.]*

NEW PLANTS FROM THE SWAZI SURVEY.—The conclusions arrived at in the article on p. 273 of the *Gardeners' Chronicle* may be correct in a general sense but are scarcely so in the present case. It is pardonable for an amateur to mistake a quaint-looking Iris for a terrestrial Orchid, or even a *Sandersonia* for an orange Lily of the Valley. As to the Orchids, it is not stated whether they are epiphytal or terrestrial, but most likely terrestrial ones are meant; and is it not possible that a large number of these are still unknown? Mr. Von Weilligh has a good knowledge of South African flowers, and besides, he has a discerning eye for their peculiarities; this I conclude from his excellent and exact drawings and specimens which are before me, and I may safely predict that most of his finds will prove them to be new to cultivation, or even to science. The *Gladiolus*, "Green Giant," has leaves not 3 inches but 3 feet long; the so-called Lilies are *Arum* Lilies or Aroids, among which is a beautiful *Pothos*! In any case, honour is due to Mr. Von Weilligh for having selected these remarkable plants which will soon reach Europe, and then will be seen for themselves. *Max Leichlin, Baden-Baden.*

THE FINE AUTUMN.—A walk round the flower-beds and borders at Rystock, Exmouth, on October 27, revealed a wealth of beauty such as is seldom seen at this season. On the terrace-walk there are some thirty large vases filled with *Pelargoniums* in variety. Each vase having a separate coloured variety; large plants saved from last year were put out in the spring, and all through the season have been full of flower, and they are still very showy with Ivy-leaf *Pelargoniums* and *Lobelias*, full of brightness and beauty. The flower garden, though much past its best, has still some beauty; the beds of tuberous *Begonias* are a mass of colour, the *Coleus Verschaffeltii* is past its best, but *Iresine Lindeni*, *Ageratum*, *Mesembryanthemum*, bronze and tricolor-leaved *Pelargoniums*, besides one named *Verona*, are bright, gay, and attractive. In other trees and borders we have *Dahlias* in quantity, the colours of the blooms being unusually clear and bright; *Sweet Peas*, *Fuchsias*, *Salvias*, *Michaelmas Daisies*, in variety and quantity; *Cosmos bipinnatus*, *Chelone barbata*, *Rudbeckias*, *Helianthus*, herbaceous *Philoxera*, fine rows of *Coreopsis*, *Scabiosa*, *Leptocoryne*, *Cannas*, still bright; *Marguerites*, *Stocks*, *Violets*, *Carnations*, *Schizostylis coccinea*, *Nicotiana affinis*, &c.; beside *Azalea amona*, just about opening; *Roses* in quantity, and *Gladiolus* still gay. Turning from these outside, the *Chrysanthemums* are now well advanced under glass, the blooms of fine size, freshness, and form. *W. Swan, Bystock.*

VANILLA PLANIFOLIA.—Seeing your note on the fertilisation of *Vanilla* blossoms, perhaps it may be of interest to know how this was managed successfully, during the time I had charge of these plants, when at Osberton in 1881-83 as first fruit journeyman, under the late Mr. S. A. Wood. The *Vanillas* were grown in pots in the succession Pine-stoves, which had three-quarter-span roofs, the pots being plunged in the tan over the rims, the stems trained up the iron columns that supported the roof, and covered with sphagnum-moss, which became in a short time a network of roots. The plants were syringed every morning and afternoon in the summer, and the house was kept moist except during the flowering and ripening period, when the air was kept on the dry side. Lead wire was used to secure the growths, and the sphagnum-moss; and the roots travelled over the whole bed. The glass in the roof was thick rolled plate, which prevented the scorching of the leaves, and we had no difficulty whatever in fruiting them. I have had as many as thirteen pods on one spike, and most of them 6 to 8 inches long, and perfectly straight. The "Squire," as the owner was called, never failed to have a peep at them when on his way through the garden. *E. Young, Grange Garden, 22, Chesham Road, Brixton.*

CHRYSANTHEMUM GOSSIP.

CHRYSANTEMUMS IN SURREY.—At this season of the year, when the great flower of autumn is in such superb bloom, and *Chrysanthemum* excitement runs high, it is but natural that those interested in the flower should wish to see the best collections. I have done so within the past few days in my own county of Surrey, and have been for the trouble taken rewarded by seeing remarkably fine specimens. It was on the occasion of paying the visits difficult to reconcile the really splendid June weather with the *Chrysanthemum* in full bloom, but so it was.

DOWNSIDE, LEATHERHEAD.

It is not remarkable that great interest attaches to the general condition of the collection at this place, for was not Mr. Tate's able gardener, Mr. Mease, practically the champion grower of last year? What position he may occupy this year has to be shown; but if he does not occupy the same high place, it will not be for lack of plants and blooms, or for want of trying. He would, indeed, be a wonderful grower who could command the highest position for many years in succession, especially in face of the strong competition and the able growers found on every side.

The Downside collection is chiefly housed in two large spans, and stands on centre beds, so that the blooms come near the glass. That the blooms like such a position is evident, as colour and form both attest. The more light they get, evidently the better they like it. Still, the formation of the houses, whilst giving ample light, yet to some extent breaks the force of strong sunshine, and that is better than is the employment of shading, which should only be resorted to when unavoidable. When blooms are finely developed all too early, it is wise to remove them to a cool place entirely rather than to employ shading for all the plants in the house. Mr. Mease has a high reputation for doing incurveds well, and that he will show these less easy-to-finish flowers in fine condition this season there can be no doubt. Whilst many of them were not so forward, relatively, as the huge Japanese, yet the grower knows so well how to time his blooms, that his judgment may be relied upon to have them at their best when wanted. Amongst fine flowers were *M. P. Martignac*, pale yellow, very deep; *Globe d'Or*, *Baron Hirsch*, *Brookleigh Gem*, *Austin Cannell*, reddish-maroon, very fine massive petal, fine form, a beat-out Refulgence; *R. A. Babuant*, *Madame Darier*, *Jeanne d'Arc*, *D. B. Crane*, fine golden hue; *Major Bonafon*, *Charles H. Curtis*, both grand yellows; *Noel Pragnell*, the striped variety; *R. C. Kingston*, *J. Lambert*, *Violet T. M. Lin*, *Princess of Wales*, *Robert Petfield*, *Robert Connell*, *Lucy Kendall*, and many others. These, and in every case fine blooms, serve to show something of the Woodside incurveds.

Japanese are legion. Whites and yellows are not only in rich profusion, but in new varieties they dominate largely. Here there are in grand form *Vivian Morel*, *C. A. Davis*, and the newer and beautiful sport, *Lady Hanham*; then *Edwin Molyneux*, still finest of all the crimson, is superb and numerous. How grand amongst yellows is *Phœbus*, and even the good old *Sunflower* is excellent. *Australian Gold* is very fine, and *Lady Byron* is a fine white. *Mutual Friend*, another good white, is there, so, too, are *Mrs. Weeks*, and the beautiful *Madame Carnot*. *M. Hoete* is a large flower, pale pink in colour, and has long ribbon-like petals; whilst *M. Marius Ricoud* is magenta-coloured, and a charming flower. *Modestum* is a grand incurved yellow Japanese. *Mrs. C. Blick* has very solid blooms. *A. H. Wood*, the yellow sport from *Primrose League*, gives superb flowers; so also does *Simplicity*, a remarkably fine white. Another noble white is *Mrs. J. Lewis*. Of fine incurved form is *Lady Isabel*, somewhat lavender-shaded; but perhaps the noblest of this type of flower is *N. C. S. Jubilee*, very massive petal, broad, and colour mauve shaded blue. This seems to be the bluest yet put to commerce. How fine here, as everywhere, is *M. Chenon de Leché*, the great flower of last year. *John Neville*, rich chestnut; *Ethel Addison*, *Robert*

Powell, Colonel W. B. Smith, Pride of Madford, Beauty of Exmouth, Baron Tait, Lady Ridgway, Pallanza, Edith Tabor, Miss Dorothy Foster, a very fine variety; *Australie*, and others, suffice to tell of the great variety grown here. *A. D.*

AT WOOD-HATCH.

The superb show of Chrysanthemums annually made for Mr. T. B. Haywood at this charming place by Mr. C. J. Salter, lacks nothing in beauty, or interest, or quality, this season. The plants are housed in two long and none too high lean-to's, where intermixed they make a beautiful show. The houses, as well as the position, are warm, and the blooms seem rather advanced; but it is better to be a little forward than too late. In every case the blooms seem to be of the finest form, and the plants are in perfect condition.

Amongst Japanese, very fine indeed, apparently almost unbeatable, were Lady Ridgway, everywhere good; Madame Gustave Henry, a beautiful white; Pride of Exmouth, Mrs. Harman Payne, Lady Byron, Mdle. L. Zede, lilac; H. Jacotot filz, very fine; Mrs. J. Lewis, the superb new white; Thos. Wilkins, in fine form; Col. W. B. Smith, Surprise, rich rosy-magenta; C. A. Davis, Lady Hanham, Vivand Morel, Pride of Madford, Mrs. C. Blick, Louise, Mutual Friend, Australian Gold, Miss Elsie Teichmann, broad petals, white, flushed lilac; Phœbus, in great form; A. H. Wood, much superior to G. J. Warren; Edith Taber, A. H. Fewkes, Lady Isabel, Mrs. C. Orchard, *Australie*, Thos. Wilkins, Col. Chase, a lovely flower; Madame Rosarie, Modestum, here with the Vivand Morels, on 3 feet plants, in 32's, carrying grand flowers; and many more. Then of incurveds, very fine indeed were C. H. Curtis, Princess of Wales, D. B. Crane, Major Bonafon, Empress of India, Globe d'Or, Mrs. Norman Davis, Violet Tomlin, Lord Alcester, J. Lambert, Queen of England, Madame Darier, Prince Alfred, and others too numerous to mention in detail. Beyond these, the collection is very strong in reflexed and Anemones—indeed, of these latter, there is a fine representation; and in another house are singularly perfect and beautiful Pompons in great variety. Many growers may have more large-flowered forms, but this collection is so rich in variety, and is essentially representative. The entire group is one which any gentleman may well be proud to possess, for it indicates on the part of the gardener very high capacity; still, whether in Orchids or Roses, or in anything else, all is admirably done.

BRAMLEY PARK, GUILDFORD.

Lower down the county is the fine collection which Mr. Henry Paddon has grown for Colonel Ricardo at this place. The Chrysanthemums here have not been noticed appreciably in the past, but judged by what was seen the other day, the merits are not a bit behind those of the very best. Generally, the blooms as found on the plants in the warmest lean-to's, were forward, but they were in grand form. Were Mr. Paddon to enter the lists with some of the big growers he could hold his own well. In the Guildford district he is rarely beaten, but being of very modest deportment, he does not fly at high game. In referring to his Japanese flowers, names already becoming familiar have to be repeated. Those very fine were: Mrs. Weeks, John Neville, Modestum, intense yellow; Pallanza, here remarkably good; Madame Carnot, Pride of Exmouth, M. Chenon de Leché, A. H. Wood, La Moucherette, Phœbus, Pride of Madford, Australian Gold, Dorothy Seward, Boule d'Or, Simplicity, here a grand white; *Australie*, Mrs. J. Lewis, General Roberts, Graphic, Vivand Morel, Lady Hanham, Oceana, a splendid yellow; Mutual Friend, Colonel W. B. Smith, H. L. Sunderbruch, Madame Gustave Henry, Lady Ridgway, Lady Byron, Miss Elsie Teichmann, Deuil de Jules Ferry, with others, serve to show that the collection is well up-to-date. Then of incurveds, these generally being very strong, were C. H. Curtis, Golden Enpress, D. B. Crane, Lord Alcester, Queen of England, Mrs. R. C. Kingston, Globe d'Or, Lady Kendall, Violet Tomlin, Miss Aggas, Robert Cannell, with many more. These three

collections alone place Surrey in a very high position as a Chrysanthemum county. *A. D.*

CHRYSANTHEMUMS AT ELMHURST, READING.

A large display of well-developed Japanese Chrysanthemums may be seen at Elmhurst, Reading, the residence of G. W. Palmer, Esq. As large and handsome flowers are preferred by his employers, Mr. B. Dockerill, the gardener, produces them of fine quality, and the plants, from their vigorous and healthy foliage and sturdy habit, show him to be an adept in cultivation. The variety, Amos Perry, a beautiful golden-yellow-hued incurving Japanese, was observed in superb character; it is rather tall in growth. W. H. Lincoln is also very fine, with a richness in the colouring not always seen. Pallanza and other yellows were furnished with fine blossoms. There were some remarkably good blooms of Colonel W. B. Smith, also somewhat tall in growth; and others of Charles Davis, Vivand Morel, Charles Shrimpton, Edwin Molyneux, Etoile de Lyon, John Shrimpton, Madame Ad. Chatin, M. Chenon de Leché, Phœbus, W. G. Hewitt, and others, are in the collection. Mr. Dockerill grows Souvenir d'une Petite Amie, a dwarf and vigorous pure white variety, somewhat largely; the plants carry five or six blossoms, forming a bold head, and invaluable for decorative purposes.

It was at Elmhurst that Mrs. G. W. Palmer, the distinct sport from Mrs. C. Harman Payne, arose, which just failed to obtain a Certificate of Merit at the last meeting of the National Chrysanthemum Society's Floral Committee. This sport furnishes a very interesting illustration of bud-variation, for I was informed by Mr. Dockerill that he took out all the buds of the shoot which produced Mrs. G. W. Palmer, but divided them and struck them separately, after dividing them into top buds and bottom buds. The top buds all produced Mrs. G. W. Palmer, the lower ones another distinct sport, and of a better and more symmetrical build than the parent; the flowers have a lilac surface, with a silvery-lilac reverse, pale and delicate, but distinctly of a deeper tint than those of Mrs. C. H. Payne. Mr. Dockerill has twenty plants of this sport, and they are all quite uniform in character.

Early varieties are also grown, and some for their freedom of bloom for cutting, such as Rycroft Glory and Source d'Or. Fair Maid of Guernsey is one of the chief varieties grown for late blooming. Elmhurst is a compact place with Vineries, Peach and plant-houses, propagating pits, cold frames, &c. Much cut-bloom is required, and small foliaged plants for a variety of decorative purposes. Cyclamens, Chinese Primroses, and other spring flowering-plants are coming on for blooming at that period of the year. Some fine tuberous-rooted Begonias are just going out of bloom. Bushes of *Euonymus* are grown in pots for use in the flower garden. The condition of everything reflects great credit on Mr. Dockerill. *R. D.*

FINSBURY PARK.

It is no meagre praise to the Finsbury collection to say that it is as good as usual. Each year Mr. Melville has had a display that could only be accurately described in the superlative degree, and there is always a neatness and finish about the plants that is exceptional. They are arranged this season in the old span-roofed house, in one sloping bank, with undulations, and serpentine face. There is but one path through the house, and this is a narrow one—far too narrow to be quite convenient; for although our visit was made upon an ordinary afternoon there was a block of visitors for some distance outside the entrance door. Apart from this very considerable drawback, the house is a most suitable one for the plants. Abundance of side ventilation, and a warm-water pipe running round the sides, the atmosphere appeared exceptionally pure and buoyant. In such circumstances the blooms last the longest time possible. The exhibition was opened on Oct. 9, and there are something like 2000 plants on show. Some of the varieties that appeared best done were the following:—Beauty of Teignmouth, about which there has been so much dispute as to its correct name;

Hairy Wonder, a variety popular in all the parks as being an easy doer, and one of the best representatives of the hirsute class; Miss Elsie Teichmann, a large white Japanese incurved with lemon tint; the early-flowering and distinct incurved Japanese Louise; Colonel Conway, a very fine white flower; Avalanche, and the beautifully soft yellow Phœbus. Western King appeared to be the greatest novelty; and we noticed good blooms of Cullingfordi, G. W. Childs, Duke of York, Dennis Smith Rylands, and Madame Isaac, a large smooth-petalled Japanese flower just passing. The iron pillars in the centre of the house were hidden by tall plants of the beautiful variety Murgot and its freely-produced pale rosy-lilac flowers. A few Chrysanthemums are intermixed with the Palms and other plants in the newer house, which is used as a winter garden. Both of these buildings are close to the Manor House entrance to the park.

VICTORIA PARK.

One characteristic of the collection at Victoria is repeated year after year. Certain varieties such as Gloire du Rocher and Val d'Andorre, are obtained in unusually good colour. As Mr. Moorman, the superintendent there, is a recognised "Mum" man, and a member of the Floral Committee of the National Chrysanthemum Society, it is not surprising that the plants are grown well, or that the display in this park is one of the best. Nothing novel in the way of presenting them to the public eye has been attempted, though in such a large and comparatively wide house there would seem to be opportunity to do so. No doubt all the collections in the parks suffer in arrangement from the consideration that has to be given to securing a free passage through the house for the public, and one that presents the least excuse for dawdling. In the present case there is a good wide path through the centre, and the Chrysanthemums are arranged in banks from either hand. We noticed fine blooms of the following varieties:—Bouquet de Dames, H. L. Sunderbruch, Mrs. E. S. Trafford (Japanese incurved, palest rose and lemon—very pretty); Amiral Avellan, Val d'Andorre, Beauty of Teignmouth, the new Ideality, a white-flowered incurved; Lady Byron, with richly golden Modestum, Emily Silsbury, with large pure white flowers; Mrs. A. Gardiner, a purple-flowered Anemone; and Mrs. Caterer, a white-flowered Anemone; Mrs. E. S. Trafford, the sport from W. Tricker, has done well; and there are fairly representative blooms of Edith Tabor, the huge *Australie*, International, A. H. Fewkes, Oceana, Mr. Bunn, C. H. Curtis, and others. The Victoria Park display has been on view since October 14, and will be in good condition for some time yet.

SOUTHWARK PARK.

The arrangement of the Chrysanthemums at Southwark has always differed from that in the rest of the parks, and has been less stereotyped. To obtain local change, however, this season, the collection does not afford this novelty in the same degree. The plants are displayed in an irregular T-shaped house, and the plants are grouped on either side of a central path, that passes up the stem of the T, and out at one of the elbows, the other being blocked by tall Chrysanthemums. This is another concession to the "move on" system. The display was opened to the public on October 7, and has since been visited by very large numbers of people. At most of the parks there is a tendency to obtain an exhibition at too early a date, beginning with the first week in October, and becoming very much less attractive at the beginning of November, when we think it should only be approaching its best. This is the case at Southwark, and the recent fogs have helped greatly to hurry the bloom past. There has been a good show, and a large number of varieties are grown, amongst which the hirsute section is well to the fore in more than a dozen sorts. A few of the best grown varieties when these notes were taken were Mrs. Chat. Blick, Lord Alcester, Hairy Wonder, M. C. Molin, the large yellow Margery Kinder, Mrs. J. Shrimpton, Mrs. G.

Gover (a very fine colour for this distinct variety), Sunflower, Duchess of Wellington, and Emily Silsbury. The Superintendent is Mr. R. Curle, who used to be at Waterlow Park, and formerly at Sefton Park, Liverpool.

BATTERSEA PARK.

The visitors to this south-western park, upon entering the Chrysanthemum-house, are not slow to appreciate the one characteristic that claims the attention of the connoisseur. The house is span-roofed, with the plants arranged in one group, with sloping face, and there is a path down one of the sides; the rest of the house has been decorated with Pompon and other varieties in quite a captivating fashion. Above one's head as you pass down the house, the roof is covered for a good part of its height with long-stemmed decorative and Pompon varieties, from which hang bunches of the prettiest blooms in much profusion. Even the ends of the house have been treated similarly, and therefore the effect upon entering is just that described in the frequent exclamations we heard, "What a picture!" It may be worth while reminding some of us who are prone to be carried away with enthusiasm for large blooms, that to most visitors at Battersea, this feature we have alluded to seems to be most admired. Mr. Coppin and his grower, Mr. Wheeler, are to be congratulated. The general collection is good, but has suffered much from the fog prevalent during the last week, and it is fortunate that there is a number of plants in reserve to take the places of some that will soon have passed. Mrs. G. Gover, M. Chenon de Lohé, Edith Tabor, Inar-nutious, Sunflower, Lady Byron, Queen of England, Madame Carnot, Graphic, and Hairy Wonder are a few varieties that appeared in best form.

WATERLOW PARK.

Since October 16 the show at this park has been open to the inspection of the public. The conservatory and greenhouses are filled with a very well-grown collection of plants, and the Highgate people have no cause to complain of the display their caterers have provided them with. Naturally the atmospheric conditions here and at Southwark or Battersea are very different, and it is easy to observe the effect of these upon many varieties in the collection. At no park have we seen this season better blooms of Viviani Morel and its sport, Chas Davis, than Mr. Pallett has at Waterlow, the size and colour of the blooms being both very good. Though this is one of the smaller-sized parks, the Chrysanthemums are kept well up to date, as is proved by the presence of such novelties as Western King, a large white; Modestum, M. Chenon de Lohé (one of Calvat's prettiest varieties), Kentish White, an incurved Japanese, and others. Western King had not quite developed its flowers when we saw them, but they promised well; and equally good were buds of Madame Carnot that were just upon opening. Three good blooms upon a plant well displayed the beauty of Phœbus; and there were not wanting fine examples of Hairy Wonder, W. Seward, and Lady Byron—a good white variety necessary to any collection. The most noticeable of incurved were Mr. Buun and White Beverley, but others will be better later. Waterlow is a charming little park.

CONTINENTAL NOVELTIES.

MR. ERNST BENARY includes among his novelties—

Cuphea miniata compacta (Benary).—This novelty, growing about 8 inches high, forms the first departure from the type of the valuable *Cuphea miniata*. Its flowers are produced in great numbers in various shades of carmine, scarlet, crimson, and purple, and form a pleasing contrast with the fresh green foliage. The bushy little plants are certainly a valuable addition to our dwarf-growing annuals, the more so as they bloom until late in the autumn. They will be found useful for bedding, and still more so as pot-plants, being the first annual *Cuphea* suitable for this purpose.

Leptosyne Stillmani (Asa Gray).—This beautiful Californian annual (fig. 99) comes from the Sierra Nevada, where it grows at a height of 5000 to 6000 feet. With graceful, thinly-cut foliage, and growing about 1 foot high, the habit of the plant is bushy and compact, and each of the numerous flower-stems is crowned with a golden-yellow blossom of over 1½ inch in diameter, which remains five to six weeks in full beauty. In addition to the rapid germination of the seeds, a prominent characteristic of this *Leptosyne* is that it blooms within four to five weeks after sowing, surpassing in this respect almost every other annual. It is best to sow in the open air in sandy ground in a sunny situation.

MR. FREDERICK ROEMER, Quedlinburg, Germany, ANNOUNCES—

Helianthus annuus, Goldleaf.—Single Sunflower, with golden-yellow variegated leaves.

Myosotis alpestris Triumph.—This novelty is another variety of the early-flowering class, and is



FIG. 99.—LEPTOSYNE STILLMANI (HORT. BENARY).

likely to prove the best variety for blooming in winter, and principally for cutting. It is a sport from *Myosotis alpestris robusta grandiflora* (the Hen and chickens Forget-me-Not); the plants are of a vigorous habit, grow about 12 to 15 inches high, and they bloom like their parent, having the same large bright azure-blue-coloured flowers borne on long stems, with the characteristic central double bloom.

RAMIE FIBRE.

As most readers know, the reducing to economic value of Ramie fibre has engaged the attention of the Indian Government from time to time during the past half-century. Premiums have been offered for the production of machinery capable of solving the problem of £ s. d., and much inventive talent and many thousands of pounds have been enlisted in the solution of the problem; and it is only now that we find a German firm actually placing on the market very fine samples of spun Ramie, and showing samples of fine lace work (all fibre), and quite a lot of other things, either mixtures of the fibre with cotton or wool, or fibre backed with either cotton or wool. The material is readily receptive of dyes, which in many cases appear to add to the silken sheen. The durability is probably the same as that of other vegetable fibres under like conditions, but of this we have no information. Glazed cotton and jute, not to mention other substances, have at present a

strong hold on the market for hangings, cords, trimmings, and other upholstering adjuncts; but doubtless Ramie will have a good turn when it can compete on the same terms. E. O. [The samples of lace and thread point to many uses the fibre of Ramie can be put. Ed.]

PLANT NOTES.

HYMENOCALLIS MORITZIANA VAR. MAJOR.

I IMPORTED about a dozen bulbs in February, 1895, from Venezuela, of which only this one survived, and has since furnished both offsets and seedlings. It differs from the type described in *Handbook to the Amaryllideae*, J. G. Baker; (1), in the leaves, which in the variety narrow abruptly to the stalks; (2), the valves of the spathe are not reflexed (at any rate, at first); (3), the tube is longer; (4), the segments lanceolate; and (5), the style shorter.

This plant would therefore take a position intermediate between *H. Moritziana* and *H. undulata* (Herbert, non Hort.), and, in general, is remarkable for the gigantic growth of its noble, deep green, shining eucharis-shaped leaves. It is also remarkable for the great size of its spathe, and for the development of wide bracts at the base of every one of its flowers.

Individually, these resemble the finer forms of *H. speciosa*, but the cup is smaller, and the flowers, instead of opening within a period of about three days, expand successively over a period of about a fortnight.

DESCRIPTION.

Bulb—3 to 4 inches in diameter, with short, distinct neck.

Leaves—a dozen mature leaves at flowering time, strictly distichous, glaucous, on long channelled stalks, winged at the base to clasp the stem, persistent eucharis-shaped, but not waved, with small acute tip. Very deep green in colour. Regular in shape, measuring 15 to 19 inches long in the blade, by 9 inches or more in maximum width, narrowed suddenly to the stalks, which are from 1 to nearly 2 inches wide by up to 1 foot in length.

Scape—central, stout, glaucous, nearly 2 feet high, and bearing an umbel of about twenty erect, sessile, flowers expanding successively.

Spathe—remarkably developed, the outer pair of valves being 6 inches long by 2 wide, and large subsidiary valves (or wide bracts) at the base of each flower (some 4 inches by 1 inch).

Flowers—erect, on erect tubes from 6 to 7 inches long. Very fragrant; span 8 to 9 inches.

Segments—lanceolate, recurved, more than 5 inches long by ¾ inch maximum width.

Staminal Cup—small, distinctly toothed, about an inch long, by ½-inch diameter.

Filaments—spreading, bright green in the free ends, which are more than 1½ inch long.

Anthers—¾-inch long; pollen orange coloured.

Style—horizontal, bright green, an inch shorter than the segments. Stigma capitate.

Seeds—produced single (or, as in *Elisena*, rarely two in a pod), ripening in one month, irregular, light green in colour, less than an inch long by more than half inch wide. A. Worsley, Isleworth.

[The photograph of the plant kindly sent in the spring of the present year was unfortunately unsuited for reproduction. Ed.]

VARIORUM.

WHORTLEBERRIES.—What the Cloud-berry is to the Norwegians, the Whortleberry is to the people of the West. The "Whorts" grow plentifully on the borders of Exmoor. Their half-acid, half-aromatic, flavour make the Plum-like fruit just the proper thing to eat with Devonshire-cream. Like many other wild fruits, they are the joy of childhood, and are not to be despised when that happy period has altogether fled. *Western Mercury*.

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

OCTOBER 26.—Present: Dr. M. T. Masters, in the chair; Mr. McLachlan, Mr. Veitch, Mr. Douglas, Prof. A. H. Church, Mr. Shea, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Galls on Oak Roots.—With reference to the specimens exhibited at the last meeting, Mr. McLachlan observed that the name of the insect was now *Biorhiza aptera*, and that only one sex (the female) was known as occurring in the root-galls. As soon as it was hatched, the insect climbed to the terminal shoots and laid its eggs in the buds. The result was the common spongy gall, known as the Oak-apple. In this, both male and female insects were produced, and were formerly thought to be a distinct genus, under the name of *Teras terminalis*. The females fall down to the foot of the Oak and lay their eggs in the roots under ground, and so reproduce the root-galls. This dimorphism is characteristic of other gall-insects on the Oak.

Sub-pelorian Cattleyas.—Mr. Veitch exhibited two sprays, carrying several flowers of *Cattleya labiata autumnalis*, having the two front sepals assuming the form of lips. He observed that the same plant had repeated the peculiarity both last year and this, but the lip-markings are now more pronounced. The specimens were received from Mr. F. R. Lloyd, of Coombe House, Croydon.

Carnation Leaves, Malformed.—Mr. Douglas exhibited leaves with peculiar horn-like excrescences on the margins. It was suggested that they might be caused by acari. They were forwarded to Dr. Michael for investigation. Dr. Masters observed that a *Yuca* in the Botanic Gardens, Dublin, produced very similar structures every year.

Malformed Cauliflower.—Mr. Henslow exhibited a stalk bearing a cluster of short Asparagus-like shoots, the leaves being reduced to a bract-like form, suggestive of the name of Broccoli—viz., *Brassica oleracea* var. *Botrytis asparagoides*. Dr. Masters observed that it bore a very unusual appearance, really intermediate between a Cauliflower and a wild Cabbage.

DEVON AND EXETER GARDENERS'.

OCTOBER 27.—"How a Knowledge of Botany is a Help to Gardening," was the title of a paper read at a meeting on the above date, by Mr. R. HODDER, gr. to Mrs. Trevor Barclay, Ponsonby, Torquay.

A knowledge of the physiology of plants, or the various phases of plant generation, growth, and development, was, said the essayist, a great help to a gardener. A knowledge of structural botany, in telling a gardener the reason for, and the legitimate use of the different organs of a plant, enabled him to guide its development, and treat it with greater benefit to the plant, and with much less labour to himself. A botanist has a great advantage in fertilising and hybridising over a gardener who is wholly ignorant of the science. Indeed, some knowledge of the science was essential to anyone who aspired to success as a hybridiser. Gardeners, he thought, ought all to learn botany. The paper was illustrated with living specimens of plants, roots, underground stems, leaves, flowers, &c. Referring to cross fertilisation, the lecturer showed that while certain crosses were bound to result in failure, and thus proved an impassable barrier known to the botanist, there was a wide field in other directions to the scientific hybridiser.

The chair was occupied by Mr. H. STONEMAN, late Teacher of Botany at the Exeter Museum. The Secretary (Mr. HOPKINS), exhibited a branch of *Cedrus Libani* from a tree growing in a clergyman's garden, the tree having been raised from a seed of a cone picked from one of the remaining specimens of the ancient Forest of Lebanon. A. H.

TORQUAY DISTRICT GARDENERS'.

OCTOBER 27.—This society held a most successful exhibition on the above date. The chief feature consisted of a large number of table decorations, which occupied the whole of one end of the hall. Mr. F. Peacock, gr. to P. W. BUSHBY, Esq., was awarded 1st prize for a very light and graceful arrangement; Mr. Davis, gr. to Lady MACGREGOR, being 2nd. A very striking exhibit was that of Mrs. WILSON, composed of *Gloriosa superba* blooms and grasses. The groups of Chrysanthemums were grand, Mr. C. R. Prowse, gr. to Dr. W. FORD EDGELOW, being 1st with a splendidly arranged bank of blooms (this group obtained a National Chrysanthemum Society's Silver Medal).

In the cut-bloom classes, Mr. J. BILL, gr. to the Rev. H. HUTCHINS, won the premier honours. There was a small but attractive display of fruit. Mr. W. J. GODFREY, of Exmouth, staged some grand cut blooms of Chrysanthemums, including many new varieties; and Mr. WELLS, of Earlswood, and Mr. GEE, of Teignmouth, also exhibited. Mr. W. B. SMALE was represented by a fine bank of blooms, prominent among which was Mrs. H. WELLS, generally remarked upon as being the best bloom in the show. Messrs. CURTIS, SANFORD, & Co. (Ltd.), HORN & SONS, W. BURNING & SONS, W. ALLWARD, & Co., W. TUPLIN & SONS, and R. VEITCH & SON other trade exhibitors. The attendance was very large, receipts largely exceeding those of any previous

EXMOUTH MUTUAL IMPROVEMENT.

OCTOBER 28, 29.—The twelfth annual exhibition of Chrysanthemums, fruits, and vegetables, was held in the Market Hall on the above dates and was in every way most successful.

For thirty-six cut blooms of Japanese Chrysanthemums, Mr. FOSTER, gr. to H. HAMMOND SPENCER, Esq., Teignmouth, was 1st, after keen competition. The uniform size, depth, and freshness of the flowers in this stand were noticeable. Among his best blooms were Edith Tabor, Graphic, M. Chenon de Leché, Australia, Phœbus, Ch. Davies, Colonel Chase, and Australian Gold; Mr. J. LLOYD, gr. to E. STUCKY, was 2nd, only just a few points behind.

Mr. FOSTER was 1st for twelve Japanese blooms, showing finely; and for twelve incurved, with good flowers of J. Agate, Brookleigh Gem, Jeanne d'Arc, and Barbara, among his best blooms.

The groups of plants were scarcely so good as formerly, but the circular one from General ROCKE was well deserving the 1st prize awarded it; Mr. KINGSCOTE, gr. to Mrs. CRESSWELL, was 2nd.

Other 1st prizes to groups were secured by Mr. HART, gr. to Mrs. H. STEWART; and Mr. CHURCHILL, gr. to Mrs. HUME LONG.

The grapes were more numerous than on previous occasions, and some fine exhibits were made.

A number of special prizes were offered, among them being a class for table decoration, to be judged by ladies. For the best arranged basket of Chrysanthemum blooms with Ferns, Miss SCHNEBER was successful. A Diamond Jubilee prize, offered by the Society for the best twelve blooms arranged in vase, was won by Mr. B. PIKE. A fine group of plants and cut blooms were staged by Mr. W. J. GODFREY, who had many choice varieties and novelties in excellent form. S.

A FUNGUS FORAY AT CASSIOBURY.

OCTOBER 30.—By the permission of the Earl of Essex and Sir Matthew White Ridley, the annual fungus foray of the Hertfordshire Natural History Society took place on Saturday, in the Swiss Cottage Woods, Cassiobury Park, and the wood-walks adjoining Cassiobury House. The foray was under the direction of Mr. Hopkinson, and the fungi were identified by Mr. George Massee, of Kew.

In the morning, a party of eight crossed the park to the grounds of the Swiss Cottage, finding about twenty species in the park, and increasing the number to nearly a hundred, besides several species not identified at the time, in the damp woods on the opposite side of the River Gade to the Swiss Cottage, which proved to be a prolific hunting-ground, especially for microscopic forms. In the afternoon, the party, increased to upwards of twenty, entered the Cassiobury Wood-walks, and strolled along the old high road which passes through them. The number of species found in the morning was nearly equalled in the afternoon, thus almost doubling the record, and there was again a much larger proportion of microscopic fungi than has been found at previous forays. The great find of the day was that of *Agaricus* (*Clitocybe*) *Sadleri*, discovered by Miss Buchanan. The species was first found growing on a tub in the Botan'c Gardens in Glasgow, and there is no previous record of its occurrence in England. It has now been added to English species by a young lady whose native place is the same as that whence came the fungus, or at least our knowledge of its existence as a species. After a brief visit to the gardens of Cassiobury House, the wood-walks were left, and the members were kindly entertained to tea by the Society's Librarian, Mr. Daniel Hill, at his residence, "Herga." Altogether, an interesting and enjoyable day was spent, and with the satisfactory result of beating any previous record in the number of species of fungi found.

ROYAL HORTICULTURAL OF ABERDEEN.

OCTOBER 30.—The annual meeting of the members of this Society was held on the above date. Mr. James Murray, of Glenburnie Park, presided.

The report by the directors stated that one exhibition was held during the year, in the grounds of Gordon's College, Aberdeen. From a horticultural point of view the show was fully up to the average; but, although the expenses were reduced by the sum of £110, the financial results were very unsatisfactory, owing to the unfavourable weather. The Directors, however, had pleasure in reporting that there is a free balance of over £190 to carry forward to next year's accounts.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 1.—A number of very fine blooms came before the Floral Committee at the meeting held at the Royal Aquarium on Monday last, and though the members of the committee were fewer than is usual owing to the occurrence of numerous exhibitions, the awards were made with great circumspection.

From Mr. N. MOLYNEUX, gr., Rookesbury Park, Fareham, came Japanese, Mary Molyneux, a flower having a pale purple ground colour, with silvery reverse—a fine incurved variety that received a First-class Certificate. And his new white incurved, Mrs. N. Molyneux, a grand flower in the

style of Empress of India, but considered to be sufficiently distinct to merit a First-class Certificate of Merit. Japanese Princess Charles of Denmark, the committee wished to see again, it being a very promising flower; its colour, buff with a centre of orange-yellow hue.

From Mr. B. Dockerill, gr. to G. W. PALMER, Esq., Elm-hurst, Reading, came Mrs. G. W. Palmer, the rich bronzy and buff-coloured sport from Mrs. C. H. Payne, in much better form than it has hitherto been seen. It was unanimously awarded a First-class Certificate of Merit. From the same place came Miss Kittie Barratt, which came on the same shoot as Mrs. G. W. Palmer, six blooms being shown; but the committee regarded this as the true original form of Mrs. C. H. Payne, this variety of late having developed a rough and pale character.

Mr. H. WEEKS, gr., Thrimpton Hall, Derby, sent some seedlings of his own raising, and one of these, W. Cursham, a very promising variety, dull red, with amber reverse, the committee wished to see again. This was said to have been a seedling from G. C. Schwabe crossed with R. Owen. Two others have pretensions to character, and will no doubt be seen in better condition another season.

Mr. WILLIAM WELLS, Earlswood, Redhill, sent several Japanese and incurved varieties, among them G. J. Warren (First-class Certificate), a pale yellow-sport from Madame Carnot, which showed a greater depth of colour than has been before observed. N. C. S. Jubilee, a flower of a very pleasing delicate tint of mauve-lilac shade, with an ivory reverse, is very promising and was Commended. Directeur Liebert, amaranth, with soft shade of silvery-pink on the reverse of the florets, was in better character than we have previously seen it. Some new incurved were also shown by Mr. WELLS, the most promising being Topaz Orientale, a large pale-yellow bloom, loose in the centre as shown; and Lady Isabel, a flower of delicate purple shade, silvery-white on the reverse of the florets. From Mr. W. J. GODFREY, nurseryman, Exmouth, came a batch of new varieties, and First-class Certificates were awarded to the following Japanese varieties:—Mrs. F. A. Bevan, very soft pink with a silvery reverse—a full and beautiful incurved Japanese; George Foster, a grand incurved Japanese of excellent shape, with broad florets of a soft yet bright yellow colour; and Mrs. Charles Birch, incurved, white, the broad base florets of a soft shade of bright lilac colour; Admiral Ho, pale yellow; President Norm, rich bright buff, distinct, and pleasing in colour—the blooms being rather small, the committee wished to see it again; and Mrs. Hunter Little, soft yellow hue.

Mr. J. OLLERHEAD, Wimbledon House, Wimbledon, sent Japanese Lemawee, one of Messrs. Nathan Smith & Son's raising, Adrian, U.S.A., the colour bluish-white, the long basal florets of a delicate pink hue—a very pleasing sort of flower, of good quality. It was awarded a First-class Certificate.

M. ALFRED CHANTHIER, Bayonne, France, sends some seedling incurved flowers, but they were not sufficiently matured to enable the committee to judge accurately of their merits.

From Mr. R. OWEN, nurseryman, Maidenhead, came several new varieties, chiefly of incurved varieties, one of which, Thomas Lockie, white, with slight lilac base to the florets, the committee wished to see again. Thomas Singleton, white with deep pink base, fine in shape, was also of a decidedly promising character. Japanese Royal Standard was very fine in colour, but somewhat loose in texture, and was remarkable for its rich tint.

Mr. H. J. JONES, Ryecroft Nursery, Lewisham, sent several Japanese, the most striking of which was Mrs. P. R. Bum, a new one, flowered white with primrose cushion, which the committee wished to see again. Incurved Lady Gormston, a white variety, somewhat resembles C. H. Curtis in build.

CHRYSANTHEMUM SHOW AT DEVIZES.

NOVEMBER 2.—The annual Chrysanthemum Show, held in connection with the Devizes Benevolent Society, took place in the Corn Exchange on the above date, and proved, as it usually does, a decided success. A bazaar is held also, and the proceeds, after paying expenses, are expended in benevolent objects among the poor during the winter months. Mr. THOMAS KING, who has had charge of the gardens of Devizes Castle for many years past, carries out all the staging arrangements in a highly creditable manner, and judging is always commenced at the hour named.

The stalls forming the bazaar occupied one half of the Exchange, the remainder being devoted to the purposes of the flower show. The groups, occupying a space of 60 feet, were arranged in circles down the centre, the best coming from Mr. CLACK, gr. to Lieut.-Colonel C. E. COLSTON, M.P., Roundway Park, Devizes, who has taken the 1st prize for a group of plants for six years past, had plants trained to two or three stems bearing finely developed blooms, forming a bold and striking mass, chief among them were C. H. Curtis and Lord Wolsely as representing the incurved section, and such fine Japanese as Vivand Morel, E. Molyneux, Pride of Maiford, Mrs. C. H. Payne, Madame Carnot, and Etoile de Lyon. Mr. J. HADDINE, gr. to the Marquess de LAVALLETTE, Manor House, Market Lavington, was 2nd, the plants carrying some very fine blooms.

The best nine plants not disbudded came also from Mr. CLACK, admirable decorative specimens nicely grown, and having well furnished heads of bloom.

Cut Blooms.—The leading classes for cut blooms included that for twenty-four incurved, distinct, the 1st prize going to Mr. C. J. Salter, gr. to T. B. HAYWOOD, Esq., Woodhatch, Reigate, who set up some excellent blooms, including Mrs. J. Kearns, M. P. Martignac, Queen of England, Robert Petfield, Violet Tomlin, Princess of Wales, Mrs. Heale, Mrs. R. C. Kingston, Mrs. Coleman, Lord Wolseley, Madame Darier, C. H. Curtis, and Golden Empress. 2nd, Mr. W. G. ADAMS, 59, Clarendon Road, Southsea.

With twenty blooms of incurved, Mr. SALTER was again 1st. With twenty-four blooms of Japanese, the 1st prize being a handsome Silver Cup, given by the Mayor of Devizes, Mr. SALTER was again the fore, staging fine blooms of Mrs. J. Lewis, Charles Davis, A. H. Wood, Mona C. Molin, Mrs. C. Bick, Mrs. C. Orchard, Madame A. D. Chatin, Madame Chénod de Léché, E. Molyneux, Thomas Wilkins, Vivian Morel, Australian Gold, Phœbus; Mr. T. S. VALLIS, Bromham, was 2nd.

Mr. SALTER was again 1st for twelve blooms of Japanese incurved, having in fine character Lady Ridgway, Mrs. C. H. Payne, A. H. Fewkes, M. H. Jacotot fils, Lady Isabel, Duke of York, Madame Zeide, Australian Gold, Australis, &c.; 2nd, Mr. T. ROBINSON, who had Lady Ridgway, Oceana, Lady Isabel, Lady Byron, Ernest Cannell, &c.

There was a class for twelve blooms of Japanese, the competition confined to the county of Wilts, and here Mr. W. ROBINSON came in 1st with fine examples of Madame Carnot, Australia, Charles Davis, Elith Tabor, Mrs. J. Lewis, Beauty of Teignmouth, and M. Chénod de Léché.

There was also a class for twelve blooms of Anemone-flowered varieties, not fewer than six varieties, and here Mr. SALTER again took the 1st prize, having charming blooms of Mr. W. Astor, Owen's Perfection, Mrs. Judge Benedict, Descartes, Minnie Chater, &c.; Mr. W. ROBINSON was 2nd. D.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

NOVEMBER 2. — Another very successful meeting was held on Tuesday last; Mr. TODD, the president, in the chair. Twenty-five new members were admitted. Mr. Harrow, of the Royal Botanic Gardens, was called upon to proceed with his paper on "Pot Cultivation *versus* Planting-Out." The general purport of the lecture may be said to have reversed the title; the lecture being in the main an exposition of the superior merits of the system of planting-out. Mr. Harrow has, within the last two years, as cultivator in chief under glass or sub curator, revolutionised the old pot systems so far, and as fast as may be, in the direction of planting-out; and in the fine ranges of new houses now being erected, ample provision is being made for the further extension of the system.

The exhibits included a fine spray of a superior strain of *Lagerflora rosea*, from Mr. FENTON, Clermiston, Corstorphine. Fine vases of the big *Magnus Daisy*, choice *Mignonette*, and a lovely bunch of General Jacquemont *Roses* gathered on November 3 from Mr. Todd's open garden, Stonybank, Musselburgh. As to the *Roses*, it was stated that since the early October frosts, no fewer than 300 blooms had been cut; and up to October 25, and after a dressing of nitrate of soda, no fewer than 300 to 400 bunches of *Mignonette* had been gathered. A poor sample of out-of-door Grapes was shown from Putney in the far South.

Mr. COMFORT, of Broomfield, Davidson's Mains, had an interesting exhibit of twenty-one different kinds of flowers from the open garden, forcibly illustrating the mildness of the season. D. T. F.

BRIGHTON AND SUSSEX CHRYSANTHEMUM.

NOVEMBER 2, 3. — This was a most successful show. Groups of plants were good, also specimen plants and cut flowers.

Mr. G. MILLS, Dyke Road Nursery, Brighton, won for a large and for a small circular group of plants; each group was arranged very tastefully, and in the premier class a happy combination was made of small but high-coloured *Dracenas*, *Crotons*, and *Caladiums*, placed at the base. Mr. W. E. ANDERSON, gr. to B. PARISH, Esq., Melodia, Preston Park, also won for a well-arranged group.

Mr. J. HILL, gr. to W. CLARKSON WALLIS, Esq., Springfield, Withdean, was a close 2nd in two classes of groups, but was most successful in the specimen plants competition, winning for four standards, four Pompons, four dwarfs, and for a specimen pyramid and standard.

Mr. T. FAIR, gr. to R. CLOVES, Esq., Horsham, won for four pyramids.

A good amateur's group came from Mr. C. F. GILLAM, 75, Waldegrave Road, Preston, and secured one of the Society's Medals.

Cut Flowers.—Twelve competed for thirty-six singles of Japanese varieties, Mr. J. R. HEASMAN winning with a grand lot, the best of which were Madame Carnot, Modestum, Western King, G. J. Warren, Phœbus, and Mr. C. Keyser. Mr. J. STRADWICK, Silver Hill Park, St. Leonard's-on-Sea, was just beaten by Mr. T. DANCY, gr. at St. Leonard's Forest, Horsham, for 2nd place.

Mr. WALLIS, gr. to Mrs. MAWS, Hartfield, was 1st for twenty-four Japanese, Mr. DANCY again following.

Mr. HARRIS, gr. to Lieut.-Col. C. P. HENTY, won for twelve Japanese and for six incurved, while Mr. DANCY, Horsham, won for six Anemone-flowered, and for six reflexed varieties.

Fruit.—For three bunches of white Grapes, Mr. W. Taylor,

gr. to C. W. BAYER, Esq., Tewkesbury Lodge, Forest Hill, won with Muscat of Alexandria, also for three bunches of black Grapes with Alicante and for three bunches of Gros Maroc; Mr. J. GORE, Polegate, winning for three of any black Grape, with good Gros Colmar.

For four dishes of dessert Pears, and for two of culinary ditto, Mr. G. Goldsmith, gr. to Sir E. G. LODGE, Bart., Horsham, won in a strong class; and was also first against seventeen competitors for four dishes of dessert Apples.

COVENTRY CHRYSANTHEMUM.

NOVEMBER 2, 3. — The third annual exhibition took place on the above dates. There were 115 entries. The show was opened by JOHN GULSON, Esq., who, though 84 years of age, gave a most interesting and charming address on the nature of the Chrysanthemum, and its cultivation. The chief prizes for Chrysanthemums were taken by Sir RICH. MOON, G. SINGER, Esq., J. K. STABLEY, Esq., T. BROWETT, Esq., S. LODGE, Esq., A. SMITH RYLAND, Esq., W. HERBERT, Esq., W. F. WYLYE, Esq., and others.

Messrs. B. S. WILLIAMS & SONS, London, showed a magnificent stand of Orchids and Begonias; Lord LEIGH showed a very fine collection of fruit and vegetables (not for competition), and these were artistically arranged by Mr. Martin, his lordship's gardener. Sir RICH. MOON also showed a fine collection of fruit; and the secretary of the show, Mr. F. CURTIS, had a stand of horticultural sundries. The exhibition was a great success.

OPEN CLASS.

The 1st prize for a group of Chrysanthemums (open) was won by a group from Sir RICH. MOON; G. SINGER, Esq., being 2nd.

The best group of foliage plants was also from Sir RICH. MOON.

A. JAMES, Esq., took 1st prize for twenty-four blooms of Chrysanthemums, Japanese; and W. HERBERT, Esq., was 2nd.

The best collection of twenty-four blooms, incurved, was shown by S. LODGE, Esq.; and A. SMITH RYLAND, Esq., was 2nd.

BRIXTON AND STREATHAM CHRYSANTHEMUM.

NOVEMBER 3, 4. — This old established society has again held its annual exhibition early in the season. The quality of the plants, notably the groups, was remarkably good. The cut blooms of the Japanese section were shown in better form than those of the incurved.

Plants.—The class for groups was well contested, the premier award going to a grand exhibit by Mr. HOWE, gr. to HENRY TATE, Esq., Park Hill, Streatham, each bloom being of full exhibition quality, whilst the plants were unusually dwarf, and well-clothed with dark, leathery foliage; nearly all of the plants being in 6-inch pots. The dwarf varieties employed were, *Souv. d'une Petite Amlé*, Vivian Morel, Phœbus, Chas. Davis, Mrs. Weeks, and Wm. Seward. The 2nd prize was awarded to Mr. MURSELL, gr. to Mrs. BURTON, Leigham Court Road, for an effective group, comprising many fine flowers.

The 1st prize for six specimen plants was awarded to Mr. J. WESTON, gr. to D. MARTINEAU, Esq., Clapham Park.

The 1st prize for three plants went to Mr. F. GILKS, gr. to A. MONNIS, Esq., Leigham Court Road, for a fine trio, the variety Col. W. B. Smith being about the best of these.

Cut Blooms.—The 1st prize for twenty-four Japanese was awarded to Mr. MURSELL for a very even lot of flowers of bright colours. The best were Sunstone (new), a soft primrose-yellow; Mrs. Weeks, a fine broad-petalled white; Middle Thérèse Rey, Thos. Wilkins, Phœbus, and Graphic; 2nd, Mr. Poulton, gr. to C. T. CARLEY, Esq., Leigham Court Road.

Mr. HOWE was easily 1st for twenty-four incurved blooms, well-finished and fresh, the best being Globe d'Or, Chas. H. Curtis, Princess of Wales, J. Agate, and Mrs. R. C. Kingston.

The best twelve of Anemone-flowered came from Mr. R. CASE, gr. to E. POCOCK, Esq., Clapham; the best-known old varieties being shown well.

Mr. MURSELL was 1st for twelve and also six varieties of Japanese, distinct, in a strong class.

Mr. MURSELL won again with six coloured varieties, his choice being Modestum, very fine; Mr. HOWE was 2nd with remarkable blooms of Vivian Morel.

The best basket of Chrysanthemums arranged for effect was exhibited by Mrs. STRUGGELL, Brixton Hill, consisting of yellow forms of Japanese in light and dark shades, with suitable foliage, and produced a pleasing effect.

At the annual dinner, held on the evening of November 3, N. N. Sherwood, Esq., presided. He was supported by the Hon. T. Mackenzie of New Zealand, Mr. J. A. Laing of Messrs. J. Laing & Sons, Mr. J. Peed of Messrs. J. Peed & Sons, and Mr. Jas. H. Veitch of Messrs. J. Veitch & Sons, Ltd., with W. Roupell, Esq., the Hon. Sec., and Mr. N. N. Sherwood, the Society's Treasurer. J. H.

SWAINSONIA ALBA AS A BEDDER.—We read in the *Florists' Exchange* of the above plant being employed as a bedding-out plant in Washington. The first experiment was made with plants which were lifted from the greenhouse benches, where they had furnished flowers for cutting during the winter.

THE WEATHER.

[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (−) the Mean for the week ending October 30.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 3, 1897.				
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.		
0	5 +	49	1 + 180	16 11	—	189	35.9	50 30
1	3 +	43	0 + 18	12 6	—	168	24.1	26 33
2	3 +	46	0 + 78	85 6	—	149	20.0	33 35
3	3 +	55	6 + 145	130 6	—	145	19.6	50 39
4	3 +	47	4 + 82	127 6	—	144	22.5	28 37
5	6 +	78	0 + 257	192 8	—	137	21.8	53 40
6	5 +	57	0 + 91	30 11	—	181	35.5	34 33
7	4 +	62	0 + 152	103 9	—	166	27.5	39 35
8	7 +	85	0 + 259	145 10	—	172	34.6	39 39
9	7 +	72	0 + 41	3 6	—	194	33.1	18 31
10	7 +	85	0 + 177	70 5	—	182	36.5	23 33
* 5 +	100	0	+ 368	80 5	—	183	29.3	41 42

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending October 30, is furnished from the Meteorological Office:—

"The weather during this period was fair and dry as a whole, but much fog or mist was experienced at times, especially over England. The fog which prevailed in the Metropolis and its neighbourhood on Thursday was unusually dense.

"The temperature was again above the mean, the excess ranging from 7° in 'England, S.W.' and over Ireland, to 3° over the eastern and central parts of Great Britain. The highest of the maxima were registered towards the end of the period, and ranged from 66° in the 'Midland Counties' and 'England, S. and S.W.' to 62° in 'Scotland, W.' The lowest of the minima, which were recorded on rather irregular dates, ranged from 34° in 'Scotland, E.', to 38° in 'England, S.' and 'Ireland, S.', to 41° in 'England, S.W.' and 49° in the 'Channel Islands.'

"The rain/fall was again much less than the mean. Over the greater part of England there was an almost entire absence of rain, but small amounts of moisture were deposited in the gauge by the wet fogs and dews which prevailed during the latter half of the week.

"The bright sunshine varied considerably in the different parts of the kingdom, but was, as a rule, more prevalent in the east and south than in the west. The percentage of the possible duration ranged from 53 in 'England, S.', 50 in 'Scotland, N.' and 'England, E.', and 41 in the 'Channel Islands,' to 26 in 'Scotland, E.', 23 in 'Ireland, S.', and 18 in 'Ireland, N.'"

MARKETS.

COVENT GARDEN, NOVEMBER 4.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Evergreen shrubs, in variety, doz.	6 0-24 0
Aspidistras, per doz.	13 0-30 0	Ficus elastica, each	1 0-7 6
— specimen, each	5 0-15 0	Ferns, small, doz.	1 0-2 0
Asters, various, per doz.	2 6-5 0	— various, doz.	5 0-12 0
Chrysanthemums, p. doz. pots	5 0-9 0	Foliage plants, per dozen	12 0-36 0
— specimen, or large plants, ea.	1 6-2 6	Liliums, various, per dozen	9 0-12 0
Coleus, per doz.	2 0-4 0	Marguerites, p. doz.	6 0-9 0
Dracenas, each	1 0-7 6	Mignonette, p. doz.	4 0-6 0
— various, p. doz.	12 0-24 0	Palms, various, ea.	2 0-10 0
Erica, various, per dozen	9 0-18 0	— specimens, ea.	10 6-84 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms...	4 0-6 0	Mignonette, dz. bn.	2 0-4 0
Asters, 12 bunches	4 0-6 0	Orchids:—	
Bouvardias, pr. bun.	0 4-0 6	Cattleya, 12 bms.	8 0-12 0
Carnations, pr. doz.		Odontoglossum	
blooms ...	0 9-2 0	crispum, 12 bms.	1 6-3 0
— per doz. bun.	4 0-6 0	Pelargoniums, scar-	
Chrysanthemums,		let, per 12 bun.	4 0-6 0
p. doz. blooms	0 8-2 6	— per 12 sprays...	0 4-0 6
— p. doz. bunches	3 0-6 0	Pyrethrums, per 12	
Eucharis, per dozen	3 0-5 0	bunches ...	1 6-2 6
Gardenias, per doz.		Roses, Tea, per doz.	0 6-1 0
blooms ...	2 0-3 0	— yellow (Pearls),	
Hyalanth, Roman,		per dozen ...	1 6-4 0
dozen sprays ...	0 9-1 6	— red, per dozen	0 9-1 0
Lilac, French, per		— pink, per doz.	1 6-2 6
bunch ...	5 0-6 0	— Safrano, p. doz.	1 0-2 0
Lilium Harriet, per		Roses, per doz. bun.	4 0-6 0
doz. blooms ...	4 0-6 0	Stephanotis, dozen	
— Lancifolium,		sprays ...	3 0-4 0
per doz. blooms	1 6-2 0	Tuberose, 12 bms.	0 3-0 4
Lily of the Valley,		Violets, 12 bunches	1 6-2 0
dozen sprays ...	1 0-2 0	— Parma, French	2 0-2 6
Maidenhair Fern,		White Lilac, French,	
per 12 bunches ...	4 0-8 0	per bunch ...	5 0-6 0
Marguerites, per 12		White Narciss,	
bunches ...	2 0-4 0	French, 12 sprays	3 0-8 0

ORCHID-BLOOM in variety.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples (Cox's)		Grapes, Muscats,	
Orange, pr. bush.	14 0-16 0	"Cannon Hall,"	
— (Ribston), bal.	14 0-16 0	per lb. ...	2 0-4 0
— (Blenheim)		— Channell Islands	
Orange, se-		per lb. ...	0 6-0 9
lected, p. bush.	9 0-10 0	— Muscats, se-	
— (Wellingtons),		lected, per lb.	2 0-2 6
selected, bush.	9 0-10 0	— Muscats, 2nd	
— common vars.,		quality, per lb.	0 9-1 3
per bushel ...	2 6 —	Melons, each ...	1 6-2 0
Grapes, Gros Col-		Nuts, Cobs, per	
mar, per lb. ...	1 6-2 0	100 lb. ...	22 6-25 0
— 2nd qual., lb.	8 — 10	Pears, small, bush.	2 0-3 0
— Gros Maroc, lb.	1 0-1 6	— stewing, bush.	4 0-8 0
— Alcantas, p. lb.	1 0-1 3	Pine-apples, St. Mi-	
— 2nd qual., lb.	0 6-0 8	chael, cases con-	
— Hamburgs,		taining 6 to 8 ...	4 6-5 0
selected, per lb.	1 0-1 6	— cases contain-	
— 2nd qual., lb.	0 8-0 9	ing 10 to 12 ...	1 6-2 0
		Quinces, per bushel	10 0-12 0

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Onions (pickling),	
per doz. ...	3 0-3 6	per pocket ...	2 0-3 0
Beans, Scarlet Run-		— skinned,	
ners, per bushel	2 6-3 0	— bush ...	2 6-3 0
— French, Chan-		— Dutch, per bag	3 0 —
nel Islands, lb.	0 9 —	— Albanian, per	
Beetroots, p. bush.	1 3-1 6	bag ...	5 6-6 0
Capsicum, Chili, p.		Salad, small, per	
100 ...	1 6 —	doz. punnets ...	1 6 —
Cauliflowers, per		Shallots, per lb.	0 2 —
tally (5 doz.) ...	3 0-5 0	Sprouts, per bush.	1 0-1 3
Cucumbers, home-		Tomatoes, selected,	
grown, select,		per doz. lb. ...	5 0-6 0
per doz. ...	2 0-3 0	— Medium, do. .	3 6-4 0
— 2nds, per dozen	0 9-1 0	— Seconds, do. .	1 0-1 6
Garlic, per lb. ...	0 2 —	— Channel Is-	
Horseradish (Ger-		lands, per 12 lb.	2 6-3 0
man), per bundle	1 4-1 6	— Canary Islands,	
Mushrooms (Indoor)		per case, 12 lb.	3 6-5 0
per lb. ...	0 9-1 0		

POTATOS.

Trade is firm for finest quality and standard colour, but a shade weaker for other descriptions, owing to the continental supply. Hebrons and Snowdrops, 80s. to 105s.; Saxons and Maincrops 75s. to 100s.; Giants and Magnums, 75s. to 85s.; Blacklands, 65s. to 72s. 6d. per ton. Belgium and Dutch Ware, 3s. to 8s. 6d. per bag of 50 kilos. John Bath, 32 and 34, Wellington Street, Covent Garden, W.C.

SEEDS.

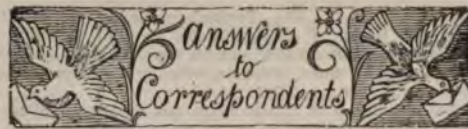
LONDON: November 3.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that there were but few buyers at to-day's market, with scarcely any transactions passing. All kinds of Clover-seeds are just now neglected. The prohibitively high prices asked for foreign Tares cause English-grown samples to be regarded with greater favour. Full rates are asked for Blue Peas and Haricot Beans. For Bird seeds the demand is meagre. New Scarlet Runner and Longpod Beans offer very reasonably. Mustard, Rape, and Linseed keep firm.

CORN.

AVERAGE PRICES OF BRITISH CORN (per imperial qr.), for the week ending October 30, and for the corresponding period of 1896, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1896.	1897.	Difference.
	s. d.	s. d.	s. d.
Wheat ...	30 9	32 10	+ 2 1
Barley ...	28 3	27 5	- 0 10
Oats ..	17 3	16 0	- 1 3

(Markets carried over to p. xii.)



BOOKS: R. Joyce. *The Art and Practice of Landscape Gardening*, by H. E. Milner (published by Simpkin, Marshall, Hamilton, Kent, & Co., Stationers' Hall Court, London); *How to Lay Out a Garden*, by E. Kemp (published by Bradbury, Agnew, & Co., Ltd., 10, Bouverie Street, Fleet Street, E.C.)—C. A. Webster's *Practical Forestry* (Rider & Son); Grigor's *Arboriculture* (Edmonston & Douglas). There are other more elaborate works on the subject.—C. J. N. *The Orchid Manual*, by B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, would be of service, there being numerous illustrations in its pages.

CARNATION: J. Gachelin. The plant is a prey to the fungus, *Helminthosporium echinulatum*. See answer to Malmaison.

CHRYSANTHEMUMS: W. B. The leaves are mined by the larvae of a minute fly. On the first appearance of the mines in the leaves, the grubs should be nipped with the thumb-nail; any neglect to do this being followed by the disfigurement, and eventually the loss of the leaves. Syringing with Quassia-water during the warm weather, might prevent the flies depositing their eggs on the leaves.

CHRYSANTHEMUM LEAVES INJURED: A. B. The injury has been caused by syringing with some caustic liquid.

CORRECTION.—On p. 369, of vol. xxi of your paper, under the caption "The Testing of New Varieties," there are erroneously attributed to Dr. Liebscher certain statements for which he is not responsible. The article referred to was originally printed as an editorial in *Experiment Station Record*, vol. vii., p. 903, and was based upon compiled records of experiments made at the Agricultural Experiment Station of Illinois. *The Experiment Station Record* is published by the Office of Experiment Stations of this department, and not in Illinois. A. C. True, Director, Office of Experiment Stations, Washington. [The article referred to was taken from the *Revue Scientifique*.]

DOUBLE-FLOWERED PRIMULA: J. Gachelin. When the plants cease to flower, place them in a frame on a spent hot-bed—*couche soudee*—plunged to the rims of the pots, and fill up between, and close round the plants with sphagnum-moss and sharp sand, and keep moist, and somewhat close. Roots will soon push into the moss in great numbers from the stems; the growths should then be detached, and potted in thumbs and small 60's, and treated similarly to Primula seedlings.

DOUBLE LAPAGERIA FLOWER: Crossland Bros. Not perfectly double, but nearly so. By layering from the joint whence these were produced, it might be possible to obtain a plant that would produce double blooms.

MAGNOLIA LEAF: E. B. Of more than ordinary size.

MALMAISON CARNATIONS DISEASED: Malmaison. The plants sent are suffering from an attack of the fungus *Helminthosporium echinulatum*. There is no known cure, the disease commencing in the tissues, and your best course is to pull up the entire plant or plants, and forthwith destroy by burning.

MUSHROOM DUNG: R. S. G. Let this remain in a flat, wide mass on the floor of a shed, after removing the long litter, and well mixing the droppings and short litter together. If it be about 1½ feet deep, it will generate a strong heat regularly all over in a few days, which it should be allowed to do for two days, and then be turned and mixed, and again spread out to heat. This should be repeated twice or thrice, as may be found necessary to get rid of the rank smell, and the tendency in the dung to get very hot, which, if it occurred in the Mushroom-bed would kill the spawn, and end in the drying of the materials of the bed and its consequent rapid cooling. A Mushroom-bed should be made about 2 feet thick, and the spawn inserted when the warmth is at blood heat, and it is not likely to get warmer.

NAMES OF FRUITS.

* Applications to name fruits are so numerous at this season, as seriously to hamper us in the exercise of our editorial duties. They entail an expenditure of time, labour, and money, of which our readers can have little idea. We are most desirous to oblige our correspondents as far as we can, but we must request that they will observe the rule that not more than six varieties be sent at any one time. The specimens must be good ones, just approaching ripeness, and they should be properly numbered, and carefully packed. We do not undertake to send answers through the post, or to return fruits. Fruits and plants must not be sent in the same box. Delay in any case is unavoidable.

A. Fyerley. 1, Annie Elizabeth; 2, Grange's Parnmain.—H. J. Wheeler. Tyler's Kernel.—E. J. 1, Lord Grosvenor; 2, Nonsuch; 3, Court of Wick.—J. Down. Apple Dumelow's Seedling, fine specimen.—T. M. 1, Blenheim Orange; 2, Beauty of Kent; 3, King of the Pippins.—H. C. Blenheim Orange.—Major C. E. Wood. Cat's-head.—C. P. 1, Emperor Alexander; 2, Duke of Devonshire; 3, not sure of.—W. Young. 1, probably from the stock, of no merit; 2, King of the Pippins; 3, Tom Putt; 4, specimen over-ripe.—C. R. 1, Cellini; 2, Ecklinville Seedling; 3, Golden Reinette; 4, Cox's Orange Pippin; 5, Beurre de Capiaumont; 6, Calabasse Bosc.—M. W. 1, Cox's Orange Pippin; 4, Warner's King; 5, Cox's Pomona; 6, Royal Codlin; others not recognised.—A. J. Long. 1, Knight's Monarch; 2, Franc Real.—John Bolam & Sons. 1, Old Winter Parnmain; 2, Scarlet Nonpareil; 3, Hambledon Deutsaus; 4, Gloria Mundi.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—G. H. M. *Euphorbia pilosa*, *Ruscus racemosus* (Alexandrian Laurel).—G. P. *Aster novi Belgie*. We cannot tell the variety. 1, *Chrysanthemum serotinum*.—R. H. G. 1, *Mikania scandens*; 2, *Pellionia pulchra*; 4, *Passiflora*, cannot say without seeing flowers; 5, *Clematis indivisa*.—H. J. *Liverpool*. *Euonymus europaeus*.—S. D. It is very difficult to name such scraps; 1, probably *Cupressus macrocarpa*; 2, *Juniperus excelsa*, probably; 3, *Picea orientalis*; 4, with cone, *Picea Glehnii*; 5, variety of Yew.—W. O. W. We suspect that the plants you sent us a month ago were not named owing to the specimens being poor ones. Several of those before us are also insufficient for determination. 2, *Epiphyllum truncatum*; 3, *Abutilon vexillarium*; 5, *Acacia* species.—W. H. D. 1, *Euphorbia pilosa*; 2, *Polygonum* sp., not a fair specimen; 6, *Carex japonica variegata*. The Asters should be sent to a nurseryman who grows these plants largely.

ORCHID FLOWERS DAMPING: Paisley. In towns, fogs cause Orchid blooms to wither; and even in the country they go in the same way during continued sunless weather.

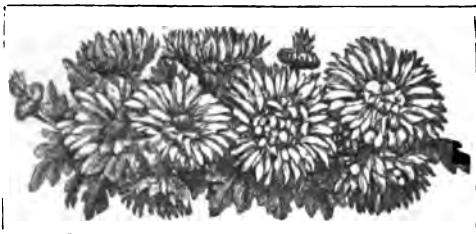
VICTORIA MEDAL: J. H. No doubt there are very many deserving gardeners and others, but we cannot undertake to discuss the qualifications either of actual or of possible medallists.

VINES AND MEALY BUG: R. S. G. See our calendar for "Fruits under Glass" in present issue. You might use the XL All Vaporiser during the winter of good strength, and during the summer of less strength. Clear out the upper crust of the border, replacing it with new loam, crushed bones, lime rubbish, charcoal, making it quite firm by tramping, then apply a mulch of dryish manure from the stables. Afford a good application of water if the border on examination is found to be dry. Besides carrying out the above operations, you should limewash the walls, do any necessary painting of the woodwork, or failing the need for this, scrub it with soap and water, doing the same to the hot-water pipes, about which mealy bugs are sure to harbour.

WHITE CAPE ERICAS FOR FLOWERING AT THE SEASON: B. H. W. There is no pure white flowered Cape Erica flowering in the winter. E. *hyemalis* flowers in early winter, and E. *Willmoreana* in late winter and spring. Neither is quite white.

COMMUNICATIONS RECEIVED.—D. T. F.—C. B. P.—C. A.—R. K. (next week)—T. C.—F. and C.—Prof. Sargent—W. T.—D. T. F.—K. D. Machab—Great Namaland—J. H. S.—T. H., I. M. Moltola—H. M.—R. N.—O. Stapf—J. J. W.—W. C. Penally.—W. M.—T. S. W.—T. T.—S. H. R.—W. Harman.—J. W.—A. S. L.—J. B.—M. R. S.—R. K.

PHOTOGRAPHS, SPECIMENS, ETC., RECEIVED.—F. M., Glamis.



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 13, 1897.

THE PINE-APPLE IN QUEENSLAND.

THE constitution of the Pine-apple in this colony is very different to what it is under artificial cultivation in the old country, and affords an instance of how a plant may become tender when cultivated under glass, and with artificial heat. The heat of the ground and the atmosphere in Queensland is, throughout a good part of the year, as high as is found in Pine-stoves in England; but it is during the months June, July, and August, which are considered the winter season, that the difference is greatest, for during July we sometimes see slight hoar frost for two or three mornings—indeed, to give a comparison, we have had sufficient to blacken the leaves of Vegetable-Marrows and sweet Potatos, but it did not seem to affect the Pine-apple plants in the least degree. During the winter they (the plants) assume a reddish tint. We cut fruit almost every day, and, as far as I can see, we shall not be out of fruit this winter, for they are in various stages at the present time (July 9), some ripening, and some showing; but it is in December and January that there is a glut of Queens, the smooth Cayenne following these. The foliage is firmer and harder than that of house-grown plants, and as evidence that this is so, the crowns may lie kicking about on the ground, with the sun shining on them at 160° or 170°, and then grow if stuck in the ground. Here the plants never have the fine appearance they have under glass, for the ploughman, with his horse-plough or scarifier, often breaks the leaves and twists the plants about. Even around Brisbane, which is 625 miles further south, they do very well; but before winter the farmers go through the fields and put a wisp of hay over the fruit, to keep the frost off them, for although frost does not destroy the leaves, it spoils the fruit.

It is not much over thirty years since the town consisted of the dilapidated tent of the pioneer, Mr. McKay, who was the discoverer of the river, and after whom the town was named; but it was not long after that when Pines began to be grown by another of the pioneers, who is now dead, and if an old country grower could drop down on the spot, and see the soil, it would be a bit of surprise for him, for the land consists entirely of sand, apparently as pure and clean as the sea-beach at Brighton, and but a few feet above the level of the sea, and oftentimes flooded by salt-water. He grows them in rows 13 feet apart, and I have heard it said that he had Pine-apples 13 lb. in weight, but I have not seen any of a greater weight than 9 lb.; but then they had been cultivated on the same land for several years. The first time I visited his grounds, after I came out here, he

pointed to the fruit of what was the third crop; he said I always got two crops, but this is the first time I have taken a third. I have seen the third suckers fruiting. It might be supposed that planted at 13 feet between the rows was a waste of land; but as it did not cost him anything, and for a good many years afterwards was not worth more than 2s. 6d. an acre, with six years in which to pay that sum, he could afford to be liberal in the use of it, but he told me he had tried them at various distances, and had found that he got the greatest weight of fruit under a wide-line system. No manure was applied, for the very sufficient reason that there was not any to apply. This grower got a good price for his Pines at Sydney; and as time went on the town grew in populousness, and he got good sale for them at Mackay, which induced other persons to cultivate the fruit, with the result that there was soon a glut, and prices went so low that it was not worth while to cart them into the town. A gentleman who went into it largely about 16 miles out on the sea coast (sand again), saw that he had overdone it, so he got as many pigs as he could to eat them—still then thousands of the fruits rotted on the fields. It was proposed to raise a company to can the fruit in the neighbourhood, this grower contracting to sell his Pines at 1d. each, and it would have paid him at that price, but the scheme fell through. The Trinidad Pine attains the largest size with me (8 lb. the heaviest), but Reine Pomare (a Queen) is by far the finest flavoured variety. Certainly the flavour is richer here when well ripened on the plant than it is in the old country, but the intense sunshine and dry atmosphere for a good part of the year may account for this.

No doubt many of your readers will consider that frost and clear sand are conditions not very favourable to Pine-growing; the suggestion that the sand contains disintegrated coral which abounds on the coast may have something to do with the growth; it is a supposition only, and may or may not have anything to do with our success—but the frost we can understand, and might come to the conclusion that it was impossible to grow Pines under such conditions. Although we have not seen any hoar inside the nursery, it has been seen on the grass alongside the Lagoon and in the horse paddock this winter, and yet the Pines are in all stages of growth and fruiting; one cannot help coming to the conclusion that artificial cultivation renders plants tender. The Vegetable-Marrows, I think, is an illustration; it grows and bears well till killed by frost in England, and yet it is evident that when the Pine-apple and it are grown under the same conditions, the Pine is the hardier of the two. It is very seldom that the temperature here in summer rises above 100°, it has not done so for the past five years, 96° to 98° is about the highest, so the Pine and the Pumpkin have the same chance.

I noticed in the *Gardeners' Chronicle*, May 15, 1897, in "Notices to Correspondents," some remarks on the Papaw, and I see its fruiting is not very frequent, and that is rather surprising to me, seeing the enormous weight of fruit they bear here in a season, would make them worth cultivating in England, and as the fruits ripen, one, two, or three at a time, a tree would continue in bearing for a long time; but I expect the quality of the fruit would not be esteemed. ~~Many people~~ here are fond of them, and the grower them; it is only by rid and sugar with them

that I can eat them. I plant them out in a row 3 feet apart, and at this distance they will flower when about 3 feet high; the males and females can then be distinguished, the males that are not wanted being then cut out, and the females thinned out to 15 feet apart; the plants fruit well for two years. The variety that I grow is called the New Papaw, it is distinct from Papaya, in being dwarfer and branching, and as the plants are all grown from seed, they differ a good deal in sweetness and flavour. D. Buchanan, State Nurseries, Mackay, Queensland.

NEW OR NOTEWORTHY PLANTS.

ACANTHOPANAX SESSILIFLORUM.*

ALTHOUGH, as the references show, this cannot be considered a new plant even in gardens, yet it is comparatively little known. We met with it in fruit lately in the nursery of M. Lemoine at Nancy, and with the predatory instinct of the botanist, secured a specimen for the benefit of the readers of the *Gardeners' Chronicle* (fig. 100, p. 339). It is a handsome shrub, presumably perfectly hardy, with long-stalked, palmately three-lobed leaves, the lobes leathery, dark green, broadly lanceolate, and tapering at each end, finely serrate at the margins. The flowers, which we did not see, are in globose heads, and are succeeded by black berries, each the size of a small Pea, and reminding one of Privet-berries, or still more of Ivy-berries. The shrub is a native of the Amoor region, of the coast of Manchuria, and of North China. M. T. M.

TAMARIX HISPIDA VAR. KASHGARICA.

We met with this shrub flowering freely at the end of September in the nursery of M. Lemoine at Nancy. It is much more glabrous than the true *hispida*, of which there is a good figure in the *Revue Horticole* (1894), 353, but the structure of the flower is the same. The Tamarisks as described are rather numerous, but the distinctions are difficult to see. Naturally they grow in dry, rocky localities, or on ground impregnated with salt. It is on this account that the common Tamarisk does so well by the seaside.

TWO NEW NEPENTHES.

N. Jardinei, Bailey, n. sp. (after Frank L. Jardine) Stems several, rather stout, arising from a hard, knotty rhizome, 2 to 3 or more feet high; not climbing, sometimes branched, clothed with leaves mostly bearing pitchers; the young growth more or less clothed with soft hairs, the shorter ones of which are usually stellate, the longer ones frequently simple. Leaves decurrent, and slightly stem-clasping; petiole 2 inches long, winged; lamina 8 inches long, and from 2 to nearly 3 inches broad in the middle, tapering towards each end; midrib at first purplish-red, longitudinal nerves on each side of midrib usually six; the narrow portion of stalk of pitcher about 6 inches, without the loop of *N. Kennedyi* (F. v. M.); pitcher 5 to 7 inches long, 1½ inch diameter near the top, enlarging in the lower half to about 2½ inches, with numerous prominent longitudinal nerves and reticulations; anterior ribs with narrow red wings; orifice wide, and arising towards the spur; peristome narrow, about 1 line broad, with numerous transverse veins; posterior spur recurved; operculum elliptical, about 2 inches long, with numerous various-sized circular glands on the inner surface; inside of pitcher more or less spotted or stained purplish-red. Racemes dense, 4 to 8 inches long in the males, but shorter in the female racemes; male perianth of four oval segments, about 3 lines long, reflexed upon the pedicel, united, and forming a cup at the base; staminal column about the length of the perianth segments, head of anthers about 1 line

* *Acanthopanax sessiliflorum*, Seemann in *Journ. Botany*, v. (1867), 299; syn. *Panax sessiliflorum*, Ruprecht and Maximowicz, 1857, and Maximowicz, *Primit. Flor. Amur.* 131; Regel, *Garten Flora* (1862), t. 369, p. 238; *Panax sessilifolium*, C. Koch, *Dendrob.*, l. 673.

diameter; female perianth like the male, stigma sessile; capsule coriaceous, $\frac{3}{4}$ inch long, four-valved, each valve crowned by a lobe of the stigma. Hab., Somerset, Cape York Peninsula, Frank L. Jardine.

N. Rowan, Bailey, n. sp. (after Mrs. Rowan, a painter of Australian flowers). Pitchers, when fresh, beautifully marked with reddish-purple, about 6 inches long, shortly and abruptly curved at the base, from which it widens upwards, attaining a width at the top of about 3 inches, prominently marked on the outside by oblique parallel nerves and reticulate veins; anterior ribs hard, scarcely winged, much nearer together than in *N. Jardinei*; orifice very wide, posterior spur flat, tomentose; peristome 3 or 4 lines broad, with close transverse veins; operculum nearly orbicular, about $2\frac{1}{2}$ inches in diameter, with numerous circular glands on the inner face. Hab.: Somerset, Cape York Peninsula, Frank L. Jardine (Bailey, in *Queensland Agricultural Journal*, Sept., 1897.)

MARKET-GARDENING IN LINCOLNSHIRE.

Boston and its district is famous for its market-gardening: a very extensive acreage of the best land is now principally employed for the growth of market produce; the farmer class is taking to it, and cultivating crops of ordinary vegetables in place of low-priced cereals. This practice appears to be increasing throughout the Midland districts, where the soil is suitable, and an outlet is found for a great deal of the produce in the markets of Yorkshire, Newcastle-on-Tyne, &c. Occasionally, when there is a scarcity in the London markets, great quantities are sent there. The deep fertile loams about Boston, lighter in some places than others, are found very suitable for the culture of early Potatoes, especially the Ashleaf, and from one railway-station near to Boston enormous quantities are sent away soon after midsummer. It is the practice with many to plant three rows of Potatoes, leaving space for a line of Celery, the Clayworth Prize Pink being that principally grown; the plants are put out early, and as soon as the crop of Potatoes is lifted, earthing-up commences. The Celery plants are put out during the month of May. Other growers plant between each row of Potatoes some description of Winter Greens, such as Brussels Sprouts, Savoy Cabbages, or Veitch's Autumn Giant Cauliflower, and sometimes the Early Drum-head, or one of the garden varieties of Cabbage.

Spring Cabbages are another staple vegetable, a very large acreage of land being devoted to them; the leading sorts are Early Rainham, Early Offenham; and occasionally selections from the Nonpareil type, with Ellam's Early, or a kindred form, are grown in small breadths on lighter warm land somewhat sheltered. Seeds are sown from the middle to the end of July, to the first week in August. The land, having been manured for Cabbages, is planted with Potatoes for a late crop, or with Veitch's Autumn Giant Cauliflower as soon as the Cabbage crop is cleared.

Carrots are also largely grown, the intermediate types mainly; and there are moderate breadths of Beet and Parsnips; but it would appear that the Jerusalem Artichoke is becoming increasingly popular and there is a decided extension of its culture—the white-skinned variety in particular. As in Bedfordshire, so at Boston, Cucumbers and Melons are grown between the rows of early frame Potatoes, and as soon as the Potato crop is cleared, the bine is allowed to extend.

A considerable acreage is given up to Peas for picking for market; the leading varieties are Earliest of All, Improved Sangster's, William Hurst, English Wonder, American Wonder, Prince of Wales, Prize-taker, Telegraph, Fortyfold, an improved stock of Gladiator, Veitch's Perfection, and Duke of Albany. Good remunerative prices are obtained for the early and second-early varieties. Broad Beans are also a leading crop; the leading varieties being the white and green Harlington Windsor, these appearing to be most in demand in the markets.

Throughout Lincolnshire, on the soils found most

suitable for Peas, very large breadths of blue Peas are grown for boiling purposes, it having become a very important farm crop; the leading sorts are Belman's Imperial and Harrison's Glory. R. D.

BOTANISING IN SOUTH-WEST AFRICA.

THERE is no letter-box here "round the corner," but we have to ride on horseback about thirty-five hours as far as Keetmanshoop to post or to fetch letters. In Swakopmund, though we landed there goods during twelve days, I was so busy botanising in the Swakopbed, with paper-drying, changing, labelling, and such work, that I did not find time to pay my visits to all the store-keepers and officials. But my working there was very successful. I collected about 140 plants in flower or fruit, among them, I believe, some are new as you will see when Professor Schinz publishes them in the *Journal of Botany*. I went in the Swakopbed with a soldier to a distance of 16 kilometres up, as I wished to see the Ana-tree, a kind of Acacia. In very swampy places in the said river-bed grew in quantities an Apium, which may be our common European Celery.

Four or five hours' voyage brought us to Walfisch-bay, a very sheltered, but very sandy natural harbour. The settlement is placed in a still more desolate landscape than Swakopmund. I walked to Sandfontein, where I found the very curious Cucurbitacea *Acanthosicyos horrida*, a bright-green, leafless, but excessively spiny plant, with upright branches 4 ft. high, just with buds, flowers, and fruits, in all stages of development, the largest as big as a head, and covered with short, thick, fleshy spines. It is a perennial, growing in the poorest sands, and luxuriating with a little dew. I found nothing else in Walfisch-bay except the common weed, *Nicotiana glauca*, and in what quantities! In the Swakopmund, too; thirty-five hours more travelling, and we were at Lüderitsbucht. Apparently only brown barren rocks, without any vegetation; at least, a mile away from the shore. On shore I was quite astonished to find in every cleft of the granitic rock the most interesting forms of the vegetable kingdom, which kept me in that place for ten days. All the rocks around Lüderitsbucht form together an enormous natural "succulent rockery." There are three kinds of very nice-flowered *Pelargonium*, about ten species of *Mesembryanthemum*, two *Crassulas*, one *Septas*, one *Sarcocaulon* (Schinz says in his excellent book S. Burmanni, but it is a perfectly different one), one *Euphorbia*, half-a-dozen *Zygophyllaceae*, one frutescent *Umbellifer*, three yellow-flowering *Compositae*, with quite white woolly and fleshy leaves; and a very small succulent grass, *Aristida subcaulis*, besides a host of most interesting plants whose relationship I do not yet know. I have some reason to think the *Septas* a very curious minute *Mesembryanthemum*; and a precious *Stapeliaceae*, perfectly new plants, as they are so wonderfully accommodated to the surrounding stones, that only one with very practised eyes could discover them.

The travel by oxen-wagon from Lüderitsbucht to Inachab in sixteen days was for me a travel through Paradise (for other more reasonable people through a desert!). I must admit that the first three or four days through the endless sands are to most people horrifying, but then the country and the vegetation becomes surprisingly rich and varying. I collected not half of the flowering plants which I saw. I have more than 200 species together, and we are now in the middle of winter. The first few dozens of *Aloe dichotoma*, the most stately plant of the whole genus, I found first in the neighbourhood of the Tsehirubpass. It is a tree as much as 15 to 20 feet, with a stem often 2 feet diameter at the base, and more than 1 foot thick in the height of the branching.

In Gubub, at a height of about 1100 meters, how great was my joy! as I found *Sutherlandia frutescens* and *Aloe striata*, and two other *Aloes* which I did not know; one possibly new *Crassula*, growing only in places where the sun never penetrates! two *Seneciones* of

the *Kleinia* section, *Cotyledon orbiculare*, and *C. sp.* a very curious species, with leaves similar to those of a *Kleinia*, and growing on wet rocks. Around Gubub I noticed about sixty frutescent *Compositae*, each worthy to be introduced into S. European gardens. Under overhanging rocks the small leaves (flat, adpressed to the soil) of a *Massonia*, the large leaves of *Hemanthus*, a single flowering specimen of a fine *Antholyza* (quite like *A. Schweinfurthii*), two species of *Stapelia* (which I cultivate here until I have seen them in flower).

In Zachanebas there were enormous specimens of *Aitonia capensis*, tree-like bushes, with stems 18 inches thick at the base, and here in Inachab I have four specimens of this plant directly in front of my windows. In the Ugam valley I found the largest specimen of this perhaps finest of all S. African shrubs; this specimen carried at least seven full grown *Misletos*, a plant much like *Viscum album*, but in all parts smaller, and the berries yellow, not whitish. Thousands of the small berries, which had fallen off, stuck on the bark of the lower branches, where I could see them in all phases of germination, without the aid of birds. I found also number of berries germinating on the green stem of the mother *Misletos* itself. Two very fine species of *Loranthus* are very common upon *Acacia detinens* (the *Waitabit*), *horrida*, *Parkinsonia* species, and other shrubs. The flowers much resemble those of a red flowered *Lonicera*; and some *A. horrida*, were so full of those parasites, that they had broken down.

The *Acacia horrida*, growing in great quantity, is suffering much from the larvae of a goat-moth. I found stems $1\frac{1}{2}$ foot thick converted, from the base up to the finger-thick branches, into sawdust. The beautiful "Kamuldoorn" (*Acacia Giraffe*) does not seem to have such dangerous enemies as the "Doornboorn," at least, not to the same extent. Its pods are of such a curious construction, that I cannot compare them with any other species of *Acacia*. The very large seeds are embedded irregularly in a very thick mealy substance. The oxen are very fond of these pods, and the consequence is, that on garden-land, where ox-dung is used, thousands of young *Acacia Giraffe* spring up, as here at Inachab. The Ebony-tree (*Euclea pseudobenum*), a beautiful tree, with gracefully hanging thin branchlets, and black berries in the axils of the leaves, is very common here on the borders of the river-beds, and its perfectly black and very hard inner-wood may one day become an article of export, provided we get the long-promised railway from Lüderitsbucht to Keetmanshoop. Many square miles of land round Inachab are literally covered with an *Euphorbia* sp. (belonging to the same group as *E. Schimperii* and *E. rhipsaloides*), which look like enormous brooms. The green bark of these nasty plants is covered with a kind of vegetable-wax, which can easily be collected. This might also become a source of revenue to the intelligent farmer.

The *Eriobotrya japonica* seeds, which I collected shortly before leaving La Mortola, are germinating now. I saw a considerable quantity of *Ailanthus glandulosa*, which may be used as a shade-tree, for timber, and the leaves if possible as fodder for oxen. A little later on I will write you about my experiments with Vine-seed, and other discoveries which I shall make the next few months. Dinter, Inachab, near Keetmanshoop, Great Nama-land.

HOLMEWOOD, CHESHUNT.

THE interesting garden of J. T. Bennett-Poe, Esq., contains a large number of rare and pretty plants, each of which is specially tended, and various devices and shifts are resorted to for the benefit of reputed difficult subjects, whose interests are allowed to encroach on the primness usually affected in gardens of moderate size.

ORCHIDS.

The comfortable span-roofed Orchid-houses contain a very fine show of flowers of the very best quality, borne on plants in vigorous health, all indi-

the skilful treatment of Mr. Downes, the owner at Holmewood, and the interest taken in one and all, by their owner. In the first warm weather a number of well-bloomed plants of *Cypripedium*, *Spicerianum*, and a grand lot of *Dendrobium* *Schroderianum*, chiefly of the light-

lip, which in the different specimens varies from chrome-yellow to orange. Also in bloom are *Vanda* *Sanderiana*, *Coelogyne* *Micholitzii*, *Oncidium* [*Papilio*], *Miltonia* *Rozeii* *alba*, *Aërides* *Lawrenceae*, *Calanthe* *× Clive*, *Cypripedium* *× Perseus*, *C. × cardinale*, *Vanda* *Bensoni*, *Cypripedium* [*Victoriae* *Marie*], and a

orange-scarlet flowers; *Anthurium* *Andréanum* and *A. Scherzerianum* display their dark scarlet spathes; and some of the *Nepenthes* are well-furnished with "pitchers."

In the next house the most prominent plants in flower are *Vanda* *cœrulea*, a pretty group of *Pleione*: *Wallichiana*, *maculata*, and *lagenaria*; some very fine *Laelia* *Dayana*, *Cattleya* *Dowiana* *aurea*, *Dendrobium* *aureum*, blooming profusely on the current year's growths; *Coelogyne* *ocellata* *maxima*, *Zygopetalum* *intermedium*, *Lycaste* *Deppel*, and a singular bluish-white *L. Skinneri*; *Cypripedium* *Arthurianum*; and at the end of the house two very fine *Sobralia* *xantholeuca*, and one of *S. macrantha* *alba* promise well for bloom.

In the third house is a good show of *Odontoglossum* *grande*, and a few other species, and here are a quantity of splendid plants of *Cattleya* *citrina*, which bloom so profusely at Holmewood. During the heat of the summer, and until a fortnight ago, the plants were suspended from the sides of the staging, and hang over the shaded walk, a position which suits them admirably. During the winter they are suspended near the glass of the roof. In this house is a fine specimen of *Nerine* *× Mauselli*, with ten spikes of its showy carmine crimson flowers; the pretty *N. Novelty*, and other *Nerines*; also *Cyrtanthus* *lutescens*, *C. McKennii*, *C. parviflorus*, and other *Amaryllids*; and the richly-coloured *Begonia* *Freesei* incomparably illustrated from these gardens in the *Gardeners' Chronicle*, December 7, 1895, p. 681.

Also in bloom is a very fine batch of the best form of *Laelia* *pumila*, *Epidendrum* *× O'Brienianum*, *Trichosma* *suavis*, *Cypripedium* *Charlesworthi*, *Oncidium* *Forbesii*, *Cypripedium* *× Lecanum*; a fine batch of varieties of *C. insignis*, of which the *C. i. violaceo-punctatum*, *Chantini*, and *nitens* are especially good.

The other plant-houses have numerous pretty species not generally met with in gardens. Indeed, it is towards these rather than towards the ordinary run of showy flowers that Mr. Po's fancy leans. In one house the *Lapageria* *rosea*, *Nash* Court variety, and the *L. alba*, are well in bloom; *Campanula* *Vidali*, and other uncommon plants are in flower, and a batch of *Disa* *grandiflora* flourishing.

In one of the vineries are some sturdy *Dendrobiums* at rest, some of them having been ten years in cultivation. Here, also are in flower *Cestrum* *aurantiacum*, *Swainsona* *galegaefolia* *alba*, *Calceolaria* *Barbidgei*, *C. alba*, and the pretty Myrtle-like *Eugenia* *australis*, covered with pretty white flowers.

In another house are several kinds of *Nerines* in flower, *Gerbera* *Jamesoni* in bud, *Toxicophloeæ* *spectabilis*, and other flowering shrubs, and in the open garden beside the plant-houses are huge masses of *Crinum* *Powellii*, *C. P. album*, and many other fine plants, which in their season have given a great show of blooms.

CANADA IN COVENT GARDEN.

You ask me to state briefly what is being done by the Canadian Government in assisting to develop Canadian trade with Great Britain in agricultural products. I will endeavour to give you some of the general details and the outlines of our methods.

As you know, we have in Canada in connection with the Federal Government a Minister of Agriculture. The Hon. Sidney Fisher, who holds the position, is a practical farmer. He is thoroughly interested in everything which tends to promote the success and prosperity of the tillers of the fruitful soils of Canada, and realizes that the corner-stone of our national wealth rests largely upon agriculture in its various branches. Associated with him in the department is Professor J. W. Robertson, Agricultural and Dairy Commissioner, who has done as much as or more than any man in Canada by his earnest efforts and faithful service for many years in the work of the department.

As the result of the interest taken by the Government of Canada along this line, we have our agricultural colleges, our experimental farms scattered here and there over our vast dominion, our dairy schools, our



FIG. 100.—*ACANTHOPANAX SESSILIFLORUM*: BERRIES LUSTROUS BLACK. (SEE P. 337.)

ed type, some of them having nearly white and petals. Here, too, the *Calanthes* are grown, and are sending up numerous spikes in the display throughout the winter. Suspended overhead are several splendid specimens of *Obidium* *formosum* *giganteum*, with their large white flowers, bearing a yellow blotch on the

plant of *Cypripedium* *Chamberlainianum*, which, as an imported plant, opened its first bloom in April, 1895, and produced the twenty-seventh flower on the same scape in October, 1897, having been continuously in flower for thirty-one months. Of plants other than Orchids in this house, several fine plants of *Costus* *igneus* have a brilliant display of dazzling

travelling dairies, our farmers' institutes, our fruit and dairy associations—all of them educational in their character, and disseminating knowledge, gained by scientific and practical means, among our people. Canada, with its rich agricultural fields, its boundless prairies, its orchards and vineyards, its vast forests, and great mineral wealth still unexplored, is capable of supporting many millions of people; and, with its varied soils and climate, can produce everything essential to the wants of mankind—and of a very choice quality.

In consequence of our situation alongside of a nation with unfriendly and ungenerous tariffs, the Government have realised the importance of aiding in some tangible way the placing of Canada's surplus productions upon the market of Great Britain in the best possible condition. With this purpose in view, State aid has been granted in the way of a thorough cold-storage system for food products—such as poultry, eggs, creamery butter, meats, and fruits—conveying them from the points of production until they are placed upon the markets of this country. The Government are aiding and encouraging the building of cold-storage warehouses, the running of cold-storage cars to the steamships, and have subsidised this season some seventeen steamers running from Canada to the ports of Great Britain, in order that Canadian productions—which have hitherto been considered of a perishable nature because of the want of these transit advantages—may be placed upon the tables of the consumers of this country in a fresh and sweet condition, fully equal to the productions of any country.

The Canadian Government is also this season making some experimental shipments of Pears, Peaches, Plums, Grapes, and Tomatoes. The first shipments to reach England were not altogether satisfactory, the result very largely of our inexperience; but I am pleased to say that the shipments now arriving are in fine condition, and will ultimately prove a grand success. The consignments by the steamship *Gerona* are being sold at Covent Garden Market by Messrs. Garcia, Jacobs & Co., who are acting for the Government in London.

In conclusion, let me say that I trust that the people of the grand old motherland will give her colony a preference, if no more, in our exports to this country, all things being equal. This much we as Canadians do claim, and look forward to in the near future, that the consuming millions of this great country should be supplied by the people and from the soils of the colonies, instead of buying their food from foreign nations that are hostile to England, not only in tariffs, but in sentiment and sympathy. *W. T. Crandall, Agent, Canadian Department of Agriculture, in "Canadian Gazette," Oct. 23, 1897.*

FLORISTS' FLOWERS.

THE HERBACEOUS CALCEOLARIA.

VERY seldom do we see well-grown plants of the above in private gardens, though few if any flowering-plants make a finer show, and last such a length of time as the Calceolaria. One batch alone I have had in flower for fully six weeks. Where there are large conservatories, the Calceolaria is as indispensable a plant in the spring months as the Chrysanthemum in the autumn, not for cutting purposes certainly, but for a display in the pots, and in this respect it has no equal at that season.

I generally sow the seed (which should be secured from a trustworthy source) about the end of July, in shallow pans filled with light sandy soil, thoroughly soaking the soil with water before sowing the seed. The seed must be carefully distributed thinly over the surface, and barely covered with a sprinkling of silver-sand, a sheet of glass, and a covering of brown paper, or a tile put over each pan, and they are put into a cold frame. In the course of three or four days the plants appear, and the pans should be placed near to the glass, removing the paper, but allowing the glass to remain over the pans for a few days longer. Should the soil require water, the pans

must be sunk to half their depth in a pail of water, and the water allowed to penetrate the soil almost up to the surface, water applied at this stage with a can causing damping. The seedlings may be pricked-off when two true leaves are made into larger pans or thumb-pots, using a compost of loam three-quarters and leaf-mould and rotten cow-dung, with a dash of silver-sand, placing a layer of dried cow-dung over the crocks. In the course of a month the plants will be ready for potting, using good yellow loam and cow-dung only, with silver-sand in the same proportion as before, but in a coarser condition. Over-potting must be avoided, small shifts and often being the best practice, the time and labour in doing this being amply repaid; pot firmly, keeping the bottom pair of leaves well down on the soil.

I have grown the plants for some time now in a large hip-roofed pit, fixing the stage so as to allow the plants to be within 6 inches of the glass, thus securing dwarf, sturdy growth. Under the stage is a large water-tank, and the moisture arising from this body of water seems to benefit the plants greatly. A cool, shady house with plenty of moisture, and an occasional dewing overhead with the syringe, is what is required by the Calceolaria during the growing season, never allowing the soil to become dry, and affording air whenever the weather is mild enough to permit this to be done. Fire-heat should be avoided as much as possible, merely warming the pipes so as to keep out the frost in severe weather. Sunshine in the early spring strengthens the plants, but as it increases in power shading must be used. A good size of pot for flowering the plants in is a large 32, a useful size if the plants are used for in-door decoration. The plant can be grown of large size in 24's, but then stopping is required. As the flower-spikes begin to throw up, the plants should be removed from the pit to the greenhouse. The flower-shoots should be neatly staked out, otherwise they fall over the sides of the pots, having an untidy appearance.

Weak applications of manure may be given as soon as the flowering-pots become filled with roots, and as the flowers open, the application of water should be very carefully carried out, too much water causing the flowers to become spotted, and damp-off. The plants must be fumigated once a fortnight, whether green-fly be observed or not. *R. N.*

CHRYSANTHEMUM GOSSIP.

(Continued from p. 333.)

MR. H. J. JONES'.—There is always much interest afforded by an inspection of the Ryecroft collection of Chrysanthemums, for all of the plants in it represent new varieties. We use the term in the comparative sense, and do not mean that they are all this or last season's novelties. Old sorts, however, that do not need to be further "tried" find no place in the show-house, and such, for instance, as Sunflower are only grown for stock purposes. When so many novelties are grown, a few of which are good, and others good for nothing, it must prejudicially affect the general display; yet there is a capital show of blooms. Mr. Jones tells us incidentally that on Sunday, November 1, about 1600 persons inspected the plants—a fact that was turned to account in favour of the Gardeners' Orphan Fund. In the principal house one is soon attracted by a few of the novelties already partially known, such as Western King, which was sent out last year jointly by Mr. Jones and Mr. Davis, of the Framfield Nurseries. Like Simplicity, it is of American origin, and both are white, slightly incurved Japanese varieties. The differences between the two are not very great, but Simplicity is a purer white, and its petals are less broad. Western King does capitally at Ryecroft, in every conceivable manner, late struck cuttings, as well as the more cared-for specimens, bearing plenty of good blooms. Mrs. Richard Jones, another white Japanese of much depth, and one of Mr. Jones' seedlings, is better known. Then there is H. J. Cutbush, a fine deep chestnut-coloured flower; Pride of Exmouth, one of the very best of Exmouth-raised Chrysanthemums; and Mrs. "Oporto" Tait, a

good yellow Japanese incurved of Messrs. Cannell's. After examining a few such recruits that have entered the ranks, but have still to prove themselves, we are attracted by numerous seedlings and continental novelties not hitherto observed. The capital market variety, Niveum, has sported, and there, under the name of Pride of Ryecroft, is displaying yellow blooms that deepen in colour as they age, and, apart from colour, are of the same character as Phœbus. If it proves as remunerative to market cultivators as Phœbus has done, it will be very valuable. Crown of Gold (Shea), sent out last spring, is very pretty; the name describes the flower, which is colour is true golden-yellow, while the centre of the flower, which is distinct in appearance, suggests a crown. Miss Shea (1897) is a yellow Japanese with slight green shade, as we saw it, and in shape and build reminds one of Avalanche. N. C. S. Jubilee (Calvat) is a fine incurved Japanese of faint rose-lilac colour; the apex of each floret is toothed, and some of the florets are very slightly hirsute. One of the most distinct flowers we saw was that of Mrs. H. Garrat Cumines (Jones). The florets are rather long, narrow, quilled at extreme base, and in those earliest produced, twisted also in various directions. It is rose-coloured, and though not an exhibition flower, is very pretty.

A pure Japanese is Frau Agathe Hesson (Jones), remarkable for being a bright, clear rose-colour, and the flower of good size. Then there are two French raised varieties in Emile Nonum, and President Nonum. The colour of the first named is suggestive of G. C. Childs, with bronzy-buff reverse, and the latter is a true buff Japanese incurved of considerable size and value. Madame Bruant has been certificated this season already, and described several times. It has a distinct and most beautiful appearance, the base being pure white, and the wide florets mauve-coloured towards apex. Vivian Morel has increased its reputation for sporting by producing a variety about midway in colour between the type and Charles Davis. This is named Lady Hanham, and different persons see in its colour tints of yellow, mauve, pink and lilac—it is really very pretty. While speaking of sports, we may mention the name that Mrs. Harman Payne's variation is known by, viz., Mrs. G. W. Palmer—it is a more pleasing tint of colour than the type. Master H. Tucker, a Japanese incurved of deep brown crimson and chestnut reverse, is already in some collections. The ladies may have another green-flowered novelty in Madame Edmond Rogers, and if a pale green flower is ever to become popular, this one is likely to do so, for the flower and florets are good. There are many other novelties in the Japanese section to be seen at Ryecroft, which we must pass on this occasion; but a seedling of the present year calls for the last word. There is but one plant of this variety, R. H. Pearson, with three blooms upon it, and it promises to be a first-class buttercup-yellow Japanese, deeper in colour than Edith Tabor, or any yet sent out.

Of incurveds there seems to be more novelties than for several years past. Mons. Desblanc, a reddish-rose flower, was seen last season occasionally; but in Chrysanthemum Bruant we have a novelty that promises to become a first class back row flower that will need very little preparation for the exhibition-board. The plant is apparently rather tall, and the large flowers are bronze coloured. "*Mum.*"

AT EARLSWOOD.

There is probably no finer or more extensive trade collection in the country than Mr. W. Wells has at Earlswood. Certainly few growers are more enterprising, or strive to secure a more varied collection of the novelties, home and foreign. The greater portion of the huge collection is housed in a big span 160 feet by 30 feet, thus giving ample room and an abundance of light and air. Out of so many new ones there is a large number that, whilst very beautiful, are not likely to make show-flowers; but there are some of much excellence. Then there are many late-struck plants blooming finely, and these furnish an admirable object-lesson in securing desirable dwarfness. Quite new of Japanese is Madame Tarlat, pure white, flowers very deep and massive.

which now seem more important, will most surely fade from sight and be forgotten long before Mr. Stiles' work (of which the volumes of *Garden and Forest* are only examples) ceases to have a wide and cogent usefulness. Mr. Stiles was a leader and a teacher in horticulture; he was such by reason of his broad culture, his thorough training, and his lively sympathy with living plants and growing fruits, and all animate nature. There is an unfortunate tendency in certain places in this country, and I suppose in every other country, to measure the value of a horti-

LILY DISEASES.

Lily diseases are often quite troublesome in nurseries, gardens, and greenhouses in this country. Certain fungi (among which certain *Botrytis* are conspicuous) attack many species, and often make very serious work of it. The common Meadow Lily, *L. canadense*, is sometimes found very much disfigured with large dead blotches on the foliage. *L. candidum* is so badly attacked, in this immediate neighbourhood at least, that its garden culture is a business of great uncertainty. The same species often suffers severely

SOIL INOCULATION FOR LEGUMINOUS CROPS.

The cultivation of leguminous crops for the atmospheric nitrogen which they gather and add to the soil, is a subject full of lively interest for all progressive American cultivators. The special use of such crops for soil-cover in orchards has been referred to before. One of the interesting points which investigation has developed is, that most leguminous species are able to forage most successfully for atmospheric nitrogen only when grown on ground previously occupied by the same species. Thus, in some experi-



FIG. 102.—THE UPPER FISH-POND, GATTON PARK. (SEE P. 312.)

icultural leader by the quantity of his so-called "practical experience;" and the application of this very erroneous standard is likely, I fear, to disparage our lamented friend and teacher in the eyes of those very ones who most needed his kind of inspiration. He was a leader by virtue of a much better title than could be given by any number of years' work in hearing Cole's beds or squirting tobacco-juice at noxious little insects. And so it is for the larger qualities of his mind, for all those delicate refinements of taste, and for that something more than academic polish, that we shall feel the vacancy he has left; and it is also for these things that his memory must long be a part of our better ideals.

also in the nursery. The most marked immunity from disease belongs to *L. tigrinum* and *L. Henryi*. Mr. Albert F. Woods, of the United States Department of Agriculture, has been studying the Bermuda Lily disease, which he finds to be due to a combination of causes, acting chiefly, however, by weakening the vegetative vigour of the plant. Improper selection and propagation, mites, fungi and bacteria, all come in for a share of the blame. This suggests that any preventive measures must look to invigorating methods of culture with such treatment as shall keep the plants free from insects and fungi. The use of chemical fertilisers in place of solutions of horse, cow, or sheep manure, is also recommended.

ments made by Mr. J. F. Duggar, in Alabama, Hairy Vetch grown without fertiliser on land where this plant had been repeatedly cultivated, yielded 17,765 lb. of green forage, and 4174 lb. of hay to the acre; while on a field where Hairy Vetch had never been grown, and where the fertilisers applied contained phosphoric acid and potash, but no nitrogen, the yield was only 235 lb. of hay to the acre. On another plot adjoining the latter, and similarly treated, except that the seed was inoculated with soil from an old Vetch field, the yield of hay was 2540 lb., or an increase of 995 per cent. The use of the German preparation, "nitragin," also greatly increased the yield of various leguminous plants. F. A. Waugh

Crocuses, Snowdrops, and Iris reticulata having developed a little activity at the root, will soon show flowers after being introduced to a warmth of 60° by night, and 65° to 70° by day, and will be found of much use where cut bloom is greatly in request. The various bulbs, plunged in coal-ashes and other sorts of protective material, should be examined

every ten days, bringing into the light those which have developed abundance of roots. These include Lilies, Roman and other Hyacinths, Narcissus, Tulips, Frezias, and Lachenalias.

Miscellaneous Subjects.—Roman Hyacinths are pretty flowers for very early flowering, and being very cheap, they should be grown in large numbers by those who need flowers about Christmas and onwards. A good batch, either in boxes for affording cut bloom, or in small pots for other use, may now be placed in the forcing-house, if they were potted and have plenty of roots. Narcissus Paper-white is another useful early bulb that may be put into heat. Those who require early flowers of Lily of the Valley had better rely upon roots that have been kept in cool chambers, such coming into bloom in a fortnight after being placed in heat. The practice of retarding does away with the need of the hard forcing always necessary to get early bloom of freshly-imported crowns. No attempt must, however, be made to retard these once they are taken from the ice, or damping-off will ruin them. On receiving them from the nurseryman, place them in pots or boxes in cocoanut-fibre refuse, and keep them shaded in a warm-house for a few days, afterwards gradually accustom them to the light, but still keeping them in a warmth of 65° to 70°.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, Eastnor Castle, Leicestershire.

Late Vinerias.—Those Vines on which Grapes are hanging require much attention at this season, or they will lose their plumpness; and ventilation is a very important matter. Let a genial warmth circulate in the heating apparatus, affording free ventilation only when the weather is bright and dry, and very little, and that only by the top ventilators when it is damp. Close the ventilators early in the afternoon, before outer air becomes charged with humidity, and keep a night temperature of 50° to 55°. If the berries shrivel in the least degree it is a sign that the moisture in the borders has given out, and they should be examined, and if really found to be dry, water should be applied on a bright morning, heat being turned on, and all the ventilation possible afforded to dry up the surface moisture before closing time. When the leaves fall, it is better to cut the bunches and bottle them, and in this way afford the Vines a long period of rest, and save the Grapes from loss. Means to shade the bunches of Muscat Grapes must be taken, or they will get browned by the sun, which soon occurs after the foliage has partially fallen and the weather is still sunny. A thin piece of tiffany drawn over the roof on bright days will avert this evil. Before putting Grapes into the Grape-room, let the bottles be cleaned and dried outside, and afterwards refill them with clean rain-water, to which a few pieces of charcoal may be added, or, rather, put the charcoal into the bottles first. Choose a fine day for bottling, and let the bunches be carried so that no shaking takes place, an important matter with Muscat Grapes, as they are easily discoloured. Having arranged the bottles, with the bunches hanging clear of them, keep the room dry, cool, and dark, and twice or thrice a week examine each bunch, cutting out decayed berries. The bunches absorb water freely during the first few days, so that it is necessary to fill up the bottles in three or four days after bottling. If these instructions be carried out the Grapes will remain plump and in good condition till new Grapes are ripe in May.

Early Fig-house.—Where ripe fruit is required in April and May, no time should be lost in getting the early-house started, if that be not already done. If the trees were clean and healthy last season, a copious syringing with soft soap or Gishurst-soap and rain-water after pruning, before the trees are untied, will be all that is needed. The soap may be used at the rate of 8 oz. to the gallon of water. Old ties, shreds, &c., should be burnt if the trees are infested with mealy-bug or scale; they should be similarly treated to Vines as indicated in my last week's calendar. Trees in pots may be plunged in a bed of warm leaves with a temperature of 75°, and doing this will be of great assistance in getting them to make an early start. The night temperature at the start should not exceed 50° at night and 60° by day. Syringe the trees twice or three times a day. Examine the borders where planted-out trees are growing, affording the soil plenty of water if found at all dry at 85°. Later Figs should be kept cool, but not exposed to hard frost, or the points of the shoots will suffer. Resting Figs in borders and pots should be kept on the dry side.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Mushrooms.—Indoor Mushrooms will now be plentiful in most gardens, and be the more appreciated since the supplies from meadowland are exhausted. The gardener should endeavour, so far as his means will allow, to make up fresh beds at fortnightly intervals. Nothing is better for the cultivation of the Mushroom than a dry underground cellar, where the temperature varies but a few degrees at any season. In artificially heated-houses, great care is needful in order not to let the temperature get higher than 60°, or the air becomes parched. The beds should be examined once a week, in order to ascertain if an application of water be needed; the beds often being dust-dry below whilst the surface is moist. Let tepid water then be used, and if the beds have been for some length of time in bearing, one handful of common salt to three or four gallons will be beneficial, or weak manure water may be afforded in place of clear water. Outdoor beds should be matted over, and other covering put over the mats to protect them against frost, snow, and rain. Thatched hurdles answer very well if litter be first placed on the bed.

Chicory, &c.—Where Chicory and Dandelion are used in salads, a good supply of the roots of these plants should be lifted and laid in a frost-proof place in readiness for forcing as may be required. It is a good practice to introduce a batch of roots into heat every week in order to keep up a succession of leaves, as the heads do not remain long in fine condition after they become fit for table. A warm, darkened shed with a warmth of 60°, or the Mushroom-house, will answer for forcing and blanching the heads; or a dozen roots may be put in light mould, in an 11-inch pot, first cutting away the top leaves at 1 inch above the root. Having packed them in the soil with the tops just protruding, afford a good watering, which will be sufficient till the crop of leaves is gathered. Roots once forced are no longer of any use, and should be thrown away.

Celery.—The finishing touches should now be put to the late Celery ridges, and even those already finished may have a little more earth added, or a layer of coal-ashes, as an extra protection against frost. The latter is less liable, owing to its porosity, to cause rotting of the tops. An advantage that the dwarf varieties of Celery, such as Sutton's Al among red, and the incomparable among white ones, is that much less earthing-up is required than is necessary with the tall varieties, which is, of course, a saving of labour, as, after all, 12 inches of nicely-blanched stalk is all that is really necessary, and the long green tops are so much waste.

White Turnips, &c.—These if of full size may now be taken up and stored for use, either putting them in heaps outside, covering with some dry litter, and afterwards banking-up with soil, or into a cool yet frost-proof shed, where they will keep in good condition for many weeks. Such hardy sorts as Chirk Castle, Red Globe, and the yellow-fleshed varieties, are able to withstand the frosts of an ordinary winter, more especially if they are not of full size when cold weather stops their growth. A supply of Jerusalem Artichoke tubers may also be lifted and got under cover, as although these are perfectly hardy, they are difficult to get when the ground is frozen hard, or it lies deep under snow.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

A Suitable Site for an Orchard.—A new orchard should be made, if possible, on land which is fairly sheltered from the north, east, and south-west winds, the soil of which would grow good Wheat, and is heavy rather than light, as well as being either naturally or artificially drained.

Excavating Holes.—For two-year-old trees, the holes in which the trees will be planted may be 18 inches wide and deep, the bottom being broken-up, but left in its place; some of the top spit may then be returned into the hole, and should the staple be impoverished, a small quantity of rotten manure may be mixed with the soil. Let the trees be rather higher in the soil than before; shake in an upright direction when planting, so that the soil may find its way among the roots; fill in about one half, and then make the soil firm by treading it slightly, and fill in the hole, mounding it slightly round the stem. Of course,

before planting any tree, the longest roots should be shortened, and damaged ones cut away. The distance between the trees may range from 15 to 20 feet. Half-standards (that is, trees having clean stems from 3 to 4 feet long) and pyramids are the best forms of trees to grow, and these should be on the paradise-stock. If the soil be wet when the trees arrive, lay them in till it becomes fit to trample upon without injury. In planting, always spread out the roots in every direction; and if the bottom of the hole be a bee-hive-like mound, so much the better. In planting grazing orchards, standards with 6-foot high stems should be employed. If the land be low-lying, the trees should be planted on mounds 12 feet in diameter, and 1 to 1½ foot above the level. All trees should be secured to stakes as soon as planted, doing this loosely, and putting a cushion between stake and tree, in order to prevent injury to the bark. A good watering may be afforded at the roots if the land be dry. The turf in grass-orchards may be returned to the soil provisionally, and in the early spring the holes may be filled in finally, the soil levelled, and the turf replaced and beaten flat. It will be well to place rabbit-proof wire round the trees without loss of time.

Winter-Moth.—As stated in last week's "Calendar" (p. 326), this is the time to take precautionary measures against the Winter-Moth, by placing Horne's grease-bands round the stems of the trees at 3 feet from the ground, more or less according to length of stem; this being the most simple and effective way of preventing the attacks of these pests, by capturing the female-moth, which is obliged to climb the tree to deposit her eggs.

VARIORUM.

JAPANESE MUSHROOMS.—Mr. Robert P. Porter, who has been conducting investigations into the industries of Japan, states that one of the most interesting studies in that country is the growing of Mushrooms in the Shikoku Island, where most of the camphor is produced. This is an important article of export, mostly to China, and during the year 1895, the last year for which the returns are available, the quantity of Mushrooms exported from Japan to all countries amounted to 1,780,597 lb. Of the numerous species of edible Mushrooms, the one called Shitake is the most important, being abundantly exported abroad, and also used for many culinary purposes at home. Logs which are used for cultivating this Mushroom are various species of Oak. The principal districts where this Mushroom is produced are the provinces forming Shikoku, Kiushiu, Wakayama, and Shiozuka prefectures. Oak-trees twenty-five to thirty-three years old are felled in the autumn, and incisions made with axes at intervals of 3 or 4 inches, the incisions generally reaching the woody layer. The trees are then cut into logs of 1 to 5 feet in length, and left in dark, secluded parts of the forest. After the third year, Mushrooms make their appearance in the incised portions. When the growth lessens they are replaced by new logs. The Mushroom grows at each season of the year, winter, spring, summer, and autumn; but the growth in winter and spring is the result of artificial stimulus. The logs are steeped in water for a number of hours, according to the dryness of locality, and then struck with pommels or axes to prepare the beds for facilitating the growth of the Mushrooms. The autumn crop is the most abundant. After being collected, Mushrooms are dried either by the sun or by artificial heat. *Journal of the Society of Arts.*

UNSEASONABLE FLOWERS.—As showing the unusual mildness of the weather generally in this country, a quantity of flowers in great variety and good condition, have been sent us from the gardens of Stokesay Court, Shropshire; amongst them being Tea, H.P., and China Roses, *Crocsmia aurea*, *Tropaeolum penegrinum*, *Kniphofia*, *Malva*, *Sweet William*, *Carnation*, *Mignonette*, *Fuchsia*, *Anemone japonica*, *Sweet Pea*, *French and African Marigold*, *Aster dumosus*, *Pentstemon*, *Tagetes pumila*, and many others which in most cases are usually laid low by the first nip of frost.

THE LINNEAN SOCIETY.—This society held its opening meeting of the session at Burlington House on the 4th inst., Dr. A. GÜNTHER, the president, being in the chair. An interesting collection of zoological and botanical exhibits collected by the Jackson-Harmsworth expedition was shown by Mr. F. G. JACKSON, the leader, and Mr. FISHER, the botanist of the expedition, the former also exhibiting upon a screen a number of photographs of animals and birds which inhabit the Arctic regions. Some lantern-slides of marsh-birds and their nests from photographs recently taken in Spain and Holland were shown by Mr.

had the present shapes and outlines, brilliant colours, the sweet scent and the honey of flowers been gradually developed through the unconscious selection exercised by insects, but this applied even to minor points, such as the arrangement of lines and the different shades of colour. Professor PLATEAU records a series of experiments on the Dahlia, in which he shows that bees come to these flowers even when the ray-florets have been removed; and, discussing this point, Sir J. LUBBOCK said it was somewhat singular that he should have selected as proving that insects are entirely attracted by scent a flower

Professor PLATEAU do not in any way weaken the conclusions which have been drawn by SPRENGEL, DARWIN, and others, and that it is still clear that the colours of flowers do serve to guide insects to the honey, and in this way secure cross-fertilisation. A paper by Mr. W. C. WORSDELL on "Transfusion Tissue" was afterwards read.

— At the evening meeting to be held on Thursday, November 18, at 8 P.M., the papers to be read are:—1, "On Pontobolus Manaarensis," by Prof. A. DENDY, F.L.S., &c.; and 2, "On Haddonella, a new genus of Foraminifera," by F. CHAPMAN, A.L.S., &c.

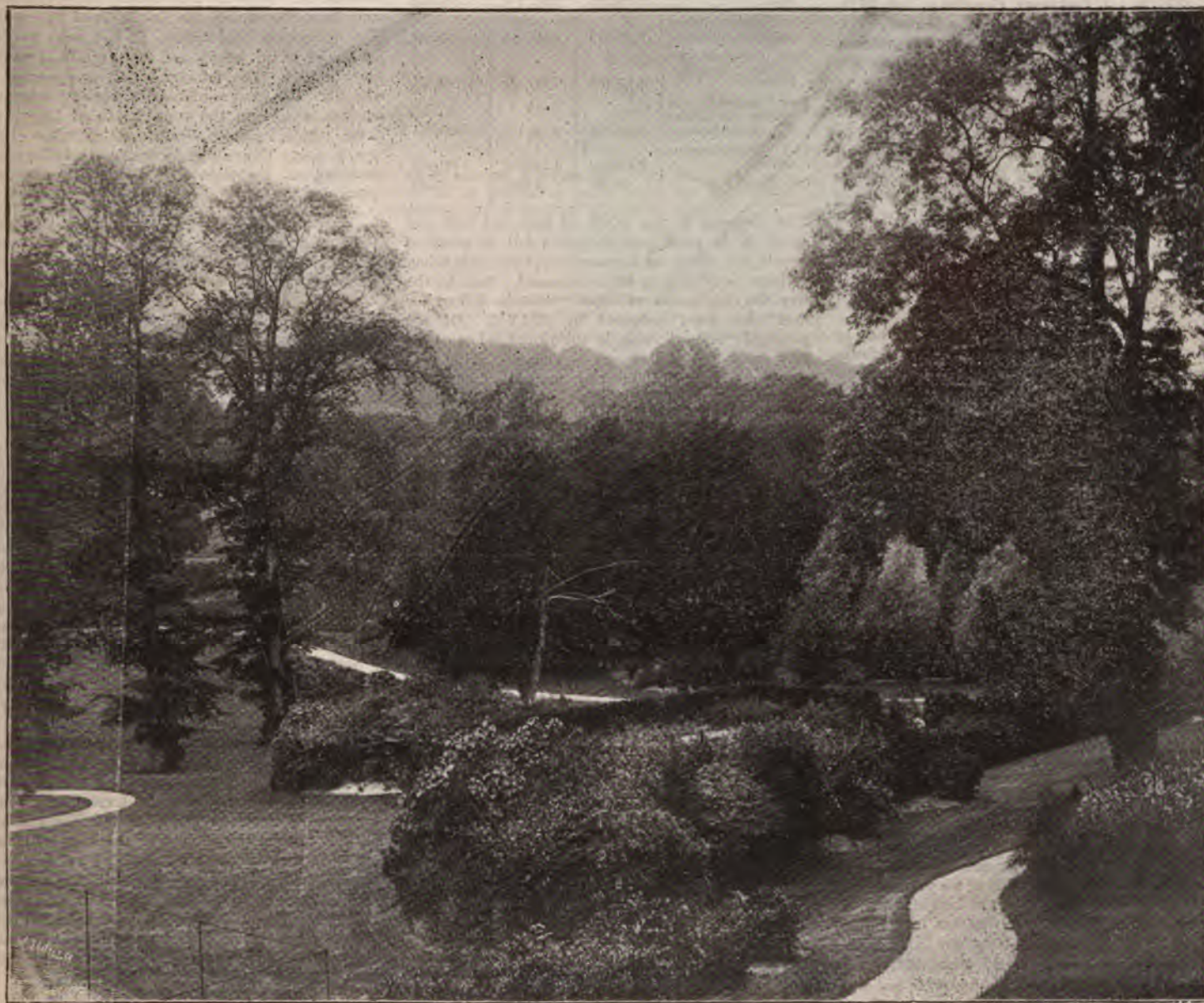


FIG. 103.—VIEW AT GATTON PARK, SHOWING REIGATE HILLS IN THE BACKGROUND. (SEE P. 342)

REGINALD LODGE. Following the discussion upon these exhibits, Sir John LUBBOCK, M.P., read a paper on "The Attraction of Flowers for Insects," in reply to three Memoirs recently published by Professor PLATEAU. The Professor attempted to show that the colours of flowers do not serve to attract insects; but on the contrary, that this is effected entirely by the sense of smell. Sir JOHN LUBBOCK explained that his view was, like that of SPRENGEL and DARWIN, that we owe to insects the beauty of our gardens and the sweetness of our fields. To them, he said, flowers were entitled for their scent and colour. Not only

which had, so far as we knew, no scent at all [?]. He gave several reasons for disputing the conclusions drawn by Professor PLATEAU from his experiments, and recorded various experiments made by himself to refute them. He had experimented upon species in which the scent is in one part of the flower and the coloured leaves in another, as, for instance, the *Eryngium amethystinum*. The flower is surrounded by brilliant blue bracts, and he found that if the two were separated the bees came much more often to the bracts than they did to the flowers themselves. He maintained, therefore, that the new observations by

THE GHENT QUINQUENNIAL.—*Eheu fugaces!* Next April we shall once more have this imposing ceremonial to record. The covered space allotted to exhibitors covers more than 8000 square metres. Pleasing prospect for the reporters! A special stamp has been prepared, a specimen of which is given in the current number of the *Revue de l'Horticulture Belge*.

DR. HOGG'S LIBRARY.—The total amount realised, remarks "W. R.," by the sale at Messrs. Sotheby, Wilkinson & Hodges, on Thursday last, of

Dr. Hogg's library, was about £372, the number of lots being 232. The following list includes the highest prices:—J. C. Loudon, *Arboretum et Fruticetum Britannicum*, 1838, the numerous plates cleverly coloured by hand, £7 15s.; *The Flower Garden Displayed*, 1732, with many fine coloured plates, very rare, £5 5s.; Leonard Mascall's *The Countryman's Recreation: or, the Art of Planting, Grafting, and Gardening*, 1640, £5 12s. 6d.; Mascall's *Booke of the Art & Maner, howe to Planke & Graffe all sortes of trees, &c.*, by one of the Abbey of S. Vincent in France, with woodcuts, printed by H. Bynnenman, without date, £15; Thomas Hill, *The Profitable Arte of Gardening*, 1593, £7; Dr. R. Hogg, *Hertsfordshire Pomona*, 1878—85, with seventy-six finely coloured plates, £6 17s. 6d.; R. Dodona, *A Nicwe Herball*, 1578, £17 10s.; J. Parkinson, *Paradisi in Sole*, 1620, £10 5s.; and Wylliam Turner, *A New Herball*, 1561, and other works bound up in the same volume £15 15s. All the foregoing were purchased by Mr. Bernard Quaritch.

"BOTANICAL MAGAZINE."—The plants figured in the November number are:—

Mammea americana, Linn.—A West Indian tree, producing a globular fruit of the size of an Orange, the pulp of which has a sweet, slightly aromatic flavour, elsewhere likened to a Turnip. The tree, with its brilliant green leaves and deliciously scented white flower, is so handsome an object that DE TUSSEAC eulogises it as "la Sirène Végétale." There is a tree in the Economic-house at Kew which flowered in 1896; t. 1562.

Tainia penangiana, Hook. fil.—An Orchid having much the appearance of a *Cologyna*, with small fawn-coloured, stellate flowers, with a white lip, the fore-lobe of which is ovate acute, with a central yellow ridge. It was discovered by Mr. CURTIS on damp rocks at Penang; t. 1563.

Cynorchis grandiflora, Ridley.—A native of Madagascar, with long linear-lanceolate green leaves, spotted with brown, as also are the sepals; the flowers are about 1½ inch broad, flat, spreading; petals white; lip violet-purple, with two retuse lateral lobes, and the anterior lobe dividing into two linear spreading sub-divisions; t. 1564.

Drimys Coleae, Baker.—A new species of *Drimys*, found in the Golis range in Somaliland by Miss EDITH COLE, and flowered by her in October last year. It is a bulbous plant, with broad, strap-shaped, fleshy leaves of a pale-green colour, but thickly spotted with darker green spots; flowers each about three-quarters of an inch long, in terminal many-flowered racemes, segments six, linear recurved, whitish, stamens pink; t. 1565.

Scolopus Bigeliorii, Torrey.—See *Gard. Chron.*, 1894, vol. i, p. 267, fig. 8.

BANQUET TO MM. LUBBERS AND DE MIDDELEER.—On November 21 a banquet will be offered to Mr. LUBBERS, the Curator of the Brussels Botanic Garden, on the occasion of his promotion to the grade of Officer of the Order of Leopold. At the same time M. DE MIDDELEER, who has been on the Council of the Linnean Society for upwards of twenty-five years, and President since 1887, is to receive a similar compliment.

MR. DINTER, formerly curator of Commander HANBURY's garden at La Mortola, has transferred his services to Mr. GESSERT at Inachab, near Keetmanshoop, Great Namaland, German South West Africa. Mr. DINTER will be occupied with the afforestation of the district, and proposes to investigate the flora of Southern Great Namaland. He will prepare dried specimens and distribute them in "centuries." The plants will be determined by Professor SCHINS of Zurich. We are glad to say that Mr. DINTER will contribute to our columns notes on the botany of the district, and on the introduction of useful plants into the colony. His first contribution, which is very interesting, will be found on p. 323.

STOCK-TAKING: OCTOBER.—It is not to be supposed that with a trade-war actually raging, and another ready to start, we can look for any improve-

ment in trade—for an increase in the volume or value of either imports or exports. The Board of Trade returns for October place before us a series of facts which it would be well that all parties concerned in the present condition of things should carefully study, and, where possible, promptly end. So far as it goes, our table of extracts from the monthly "summary" speaks for itself—a few statistics added from the mass of figures will assist in better defining the position:—

IMPORTS.	1896.	1897.	Difference.
Total value ...	£9,574,800	£8,043,763	—£1,531,037
(A.) Articles of food and drink—duty free ...	13,630,015	13,031,059	—598,956
(B.) Articles of food and drink—dutiable	3,295,672	3,166,814	—128,858
Raw materials for textile manufactures ...	5,167,994	4,517,491	—650,503
Raw materials for sundry industries and manufactures	4,549,091	5,241,185	+692,094
(A.) Miscellaneous articles ...	1,385,403	1,214,130	—171,273
(B.) Parcel Post ..	93,540	81,161	—12,379

The decrease in the values of imported food and drink is in great part due to a fall in prices of cereals, &c., owing to increased supplies—something, perhaps, to a lowering of the demand. But, by the way, the rise in the value of "animals, living, for food" has been increased by £57,653. Of the principal "minus" items in the record before us, we may note the following:—Tobacco, £120,486; chemicals (!), £75,100; raw material for textile manufactures, £650,513; miscellaneous articles, £141,272. In the "plus" column, we note metals, £144,567; oils, £26,575; raw materials for sundry industries and manufactures, £693,094; manufactured articles, £169,549. The total imports for the past ten months foot up £368,786,726, against £355,850,402—a difference of £12,936,324. Our little fruit, &c., table has all its normal interest, though it cannot always be taken as an index to prices, so much depending on the home stock and the condition of imported fruits and vegetables. At present, the market seems to be well supplied all round, and London youngsters revel in all sorts of Nuts, in good foreign Grapes, in Bananas, Pears, and Pomegranates. The figures are as follows:—

IMPORTS.	1896.	1897.	Difference.
Fruits, raw:—			
Apples ... ..bush.	1,601,403	457,447	—1,144,956
Cherries ... .."	...	...	...
Plums"	9,242	29,389	+20,147
Pears"	33,255	107,525	+74,270
Grapes"	298,242	360,151	+61,909
Unenumerated"	115,381	119,816	+4,435
Onions"	786,991	710,701	—76,290
Potatoes ... ..cwt.	25,036	325,253	+200,217
Vegetables, raw, unenumerated ... ..value	£77,081	£77,297	£216

In the matter of—

EXPORTS

a downward tendency has, of course, still to be noted. The total for last month was £19,283,052, against £20,683,457—a decrease of £1,400,405. Amongst the "minus" records are yarns and textile fabrics, £859,910; metals and articles manufactured therefrom, except machinery, £285,562; machinery and millwork, £465,041; apparel and articles of personal use, £62,637; other articles, either manufactured or partly manufactured, £256,958—a heavy list. Of the "plus" recorded are the following:—Articles of food and drinks, £51,492; raw material, £164,918; chemical and medical preparations, £37,284; parcel post, £35,382; live-stock, £10,627. We may add that the decrease for the ten months is given at £6,665,029—the figures for 1897 being £195,274,228; for 1896, £201,339,257. Added to the unsatisfactory state of things at home, there is the still unfavourable aspect of affairs abroad,

concerning all of which the reader is doubtless thoroughly well informed; and we can only hope for an improvement in the two months yet to be placed on the year's record.

THE WEATHER AT FROGMORE IN THE MONTH OF OCTOBER LAST.—Mr. O. THOMAS, of the Royal Gardens, Frogmore, contributes the following observations on the weather during the month of October. The month was very mild and most enjoyable, being sunny, warm, and dry, with a total absence of the storms that usually prevail at this season. The mean temperature was higher than usual, and although there occurred frequently slight hoar-frosts, only once was vegetation injured by night frost, viz., on the 6th, when 7° of frost were registered, blackening Dahlias, &c. After the 20th easterly winds prevailed, and dense fog during the last week of the month. The maximum temperature in the sun was 80° on the 1st of the month, and in the shade it was 65° on the 17th. The minimum, 25°, was reached on the 6th. The total rainfall for the month was .91 of an inch, whereas in the same month of 1896 it was 2.22 inches. The average at Windsor being 3.00 inches. The rainfall for the month is the lowest recorded at Frogmore for the last twenty-three years.

A MILD AUTUMN.—At the Exmouth Chrysanthemum show held on October 28 and 29, several collections of vegetables contained good and fresh samples of green Peas, Scarlet Runner Beans, and Tomatoes. A good show was also made of single and Cactus-flowered Dahlias, Sweet Peas, and some other plants. At the Exeter show, held a week later, on November 4 and 5, a good show of these flowers was again made by Mr. W. J. GODFREY, of Exmouth. All were cut from plants growing in the open air, which had not received the least protection.

THE CHISWICK MUSCAT GRAPE.—Should the very interesting Muscat of Alexandria sport, which for the second season has presented itself on a long rod of one of the Vines in the great vinery at Chiswick, eventually prove to be distinct, it should undoubtedly have the appellation which heads this note. A sport in gardens so well known merits complete association with the place of its origin. Last year the bud sporting threw a weak lateral, and but a small bunch. The berries, however, were so fine that special attention was given to the bud this year. The growth last season was too small to furnish eyes. This year the lateral is, oddly, even stouter than are other natural laterals, and there will be no difficulty in securing many good eyes. The leaves, whilst of the Muscat of Alexandria shape, are yet much more deeply serrated. That is a marked feature of the whole of them on the lateral. The bunch this season, though again not large, carried very fine berries, fully double the size of those on the other bunches, and both seasons setting, though not in the least artificially assisted, was of the very best. The berries so closely resemble those of the well known Cannon Hall Muscat in size, form and colour that there is naturally some possibility that the Cannon Hall sport has after many years been repeated here at Chiswick; but whilst that variety is far from being a free setter, the Chiswick sport seems to be a good one. Of course, a better test will be furnished in 1899, by which time it should be possible to have strong fruiting rods in pots, and others planted out in a house, capable of carrying at least a couple of good bunches each. If a Muscat of the fine form of the Cannon Hall, and as easy to grow and set as Black Hamburgh or Alicante could be obtained, without doubt it would be a grand addition to our white Grapes. The big vinery at Chiswick, it should be remembered, is far from being an ideal Muscat-house.

HOME CORRESPONDENCE.

CARNIVOROUS SLUGS.—I notice that Mr. Webster in the *Gardeners' Chronicle* for October 30 says that he has not found them out of the soil. Now my experience is exactly the reverse of his, for I have only found them when they have been

crawling on the gravel-walks, or in the houses. I first saw them in the gardens at Gledstone Hall, Skipton, Yorkshire, about 1870, and there I saw one devouring a worm, and they were fairly plentiful there. I found one here last year in the plant-stove, and afterwards several outside on the walks. *D. R. Dixon, Stourbridge.*

— *Testacella haliotidea* is found in my garden at Bishopsteignton, Devon, generally at a few inches below the surface, but on a few occasions it has been found neatly covered by dead leaves at the edges of beds, &c. I also noticed it in a garden at Plymouth, and I believe this species to be commonly distributed in the south-west of England. I was offered one some years ago by a postman at Marston, near Oxford, who had found it in his garden. Your correspondent, M. Webster, must be mistaken about the *Testacella* swallowing worms. His many-toothed tongue, a lingual ribbon, is frequently set as a microscopic specimen, and a very curious and beautiful object it is. The object of the shell on its tail is said to be to protect the creature from the attack of another of the same species following it down a worm's burrow. *S. H. Boyle.*

— Though we cannot come up to your correspondent, M. Webster, as to numbers, we have a fairly large stock of the worm-eating slug, *Testacella haliotidea*, at Middleton. They, however, certainly do not remain in or under the soil, but can frequently be seen on the gravel walks after a mild damp night; and last week I found a large one in a small puddle of water, into which it had apparently crawled and got drowned. Even in the daytime, in fairly dry weather, we can generally find them by turning up a board or slate that might be lying on the ground, sometimes with their last meal in the shape of a bristling worm hanging out of their mouths. Like your correspondent, I have found gardeners who eyed them very suspiciously; one especially, who destroyed all he could, with the idea that he was sure to be right in killing a slug. *T. Trollope, Middleton Park Gardens, Oxfordshire.*

THE LINDLEY MEDAL.—As public attention has at last been directed to the Lindley Medal, by your paragraph in last week's *Gardeners' Chronicle*, may I be permitted to respectfully state that, I also, was awarded the Lindley Medal for an exhibit of three *Phalenopsis Schilleriana* at the Royal Horticultural Society's meeting at South Kensington, on March 5, 1867; but though thirty years have passed, the medal has never come into my possession. In April, 1867, Mr. G. Eyles wrote me that the medal was awarded to me, and was in course of preparation, and that I might expect it in a fortnight or so; but the fortnight passed, and many, many more, till, in answer to my enquiry, Col. Davenport, in 1874, obligingly replied, "that when the distribution of Lindley Medals took place I should not be overlooked," a promise repeated in August, 1875, but "Hope deferred maketh the heart sick," and I have long given up any hope that may have lingered through many years, that the promises of the society's secretaries will be redeemed. Still, I may be pardoned in desiring to know whether others actually received the medals? Not for its intrinsic value did I covet this prize, but in winning a medal specially given in memory of one of our greatest horticulturists, and bestowed on such rare occasions, there was to me an honourable distinction, which the society, by withholding the medal, has never recognised. *Philip Parkes.* [Our statement last week was inaccurate. Mr. Anderson appears never to have been awarded a medal, whilst Messrs. Veitch, Bull, Parkes, Taplin, Goode, May, Needle, and Denning were each honoured in this way (see *Gardeners' Chronicle*, December 12, 1874). Has it been awarded since? *Ed.*]

KIRKE'S SOIL-TESTER.—This useful implement seems about to have the usual run of most useful inventions. New ideas, discoveries, may sleep for years, or centuries, but no sooner does some one ahead of, or more sensible than his fellows, give to his fellows something new or better, than hosts of discoverers rush to the front to assure us that they knew all about it twenty, thirty, forty, fifty or more years before. Well, what if they did? Who was the better, the richer, or who had the burdens of their labour lightened through their discoveries? You, Mr. Editor, have had several communications to that effect, so have I; the pity of it is that they were not chronicled at the time they were made, and the invention described and exhibited, and advertised. The labour and the worry of these Grapes and other fruits; the capital that

might have been thus saved, who can calculate! to say nothing of the honours that could have been so honourably and nobly won. But the inventors of soil-testers tied their talents so closely up in napkins that none of us heard a whisper of their existence until a few of the merits of Mr. Kirk's border-testers were truly chronicled. Mr. Sorley, of Falkirk, has courteously written to me of his invention, and his mention of it in a local lecture some twenty years ago. He also consulted Mr. Harry Veitch, who gave him the sound advice to protect it and bring it out. However, he tells me he did neither. And since writing to you I have heard that there may have been several others in the field, neither of them from all I have heard being the same as the one described in the *Gardeners' Chronicle*, and seen at work at Alloa and on other Vine-borders. Neither am I aware that Mr. Kirk makes any particular claim to originality. With him the border or soil-tester has been an evolution rather than a sudden inspiration. The origin and progress of such useful inventions interest only a few. Their practical efficiency and every-day usefulness are a boon to all, and I consider credit is due to Mr. Kirk, who has done what in him lay to render his great revealer of soil and border secrets as indispensable in every garden as knives or spades. *D. T. Fish.*

MUSCAT OF ALEXANDRIA.—My attention was called to an article in your paper of Sept. 25, respecting the Muscat of Alexandria Grapes grown in these gardens. Your correspondent credits me with having the finest house of this Grape in England. This encomium I am not vain enough to believe. His meagre hints on my method of cultivation will, I fear, be misleading to many who read them, as he does not correctly describe them. The vineries are lean-to's, of very light construction, with large panes of glass, so that in a hot summer (not in spring) I find it imperative to shade the Vines lightly, that is, I use one or two thicknesses of fishing-net to obviate any danger from the powerful rays of the sun, and not because ventilation is neglected, as that is a point about which I am very particular. *W. Harman, Neesham Paddock Gardens, Lutonworth.*

GARDENERS' SUPPLANTERS.—The rebuke administered by "Overhanded" in last week's *Gardeners' Chronicle*, under the above heading, was not altogether uncalled for. But he should have taken more trouble to differentiate errors against good taste, or even common decency, from downright mean and despicable conduct. The case in particular to which "Overhanded" refers, is scarcely veiled, and it amounts to this, that certain gardeners, upon hearing that another gardener was very dangerously ill, were ill-advised enough to apply to that gardener's employer for the position that it was thought the gardener would not require longer. But fortunately this skilful and respected gentleman has recovered. Now, no gardener is warranted in seeking a situation held by another, until he is certain that such a mistake is not possible; and in the case of a dangerous illness, this can only be known after actual decease. Any direct action previous to this is condemnable. At the same time, there is no indication exhibited in such a case of a desire to supplant a gardener in a position he is known to still require. There is another practice (and we are thankful to say an uncommon one amongst gardeners) of a widely different nature, where a person, by the most despicable means, slyly attempts to oust another person who has no intention or necessity to vacate the position he holds. Had "Overhanded" referred to such an action, he would have been better justified in using the terms "Supplanters," "Jacob's," "Covetousness," &c. *R. P.*

YORKSHIRE APPLES.—I was greatly interested in the note from Mr. Down of Wassand Hall, &c. the above, and the editorial remarks appended thereto, in the *Gardeners' Chronicle* of Nov. 6, p. 331. When we consider the situation of Wassand and its proximity to the sea coast, the results attained must be pronounced as decidedly good. Your correspondent asks for a recommendation of a substitute for Cox's Orange Pippin, as it does not finish its fruits well with him. My own experience of this variety may be of service to him, this experience, I may add, being gained near Hull, on the banks of the Humber at Brough. Grafted on the Crab stock and grown in the rich alluvial deposits of the Humber Basin, Cox's Orange Pippin grew very vigorously, producing such a large amount of gross wood, but very little fruit, these finishing very badly, being principally produced in the centre of the tree, and very few on the outside branches; thus they were deprived of sunshine and air, the two essentials for high colour and good flavour. Grown

side by side with several recognised rampant growers the Orange Pippin proved the worst example in this respect. The trees had received an annual mulching of farmyard manure; this was discontinued, a heavy dressing of lime was substituted, together with severe root-pruning. In after years, the branches were well thinned, and the fruit was greatly improved in quantity and quality. I have no doubt the geological formation has a great influence on this question, as I have seen capital trees of this variety nearer Hull, when we approach the chalk; also from where I now write, on the magnesian limestone. Cox's Orange Pippin gives as good result as do most other varieties under ordinary treatment. There is no novelty about the above; probably your correspondent has already tried it, if so, as a substitute the well-known Ribston Pippin may be recommended along with these others, which, generally speaking, do well in the East Riding of Yorkshire—Gascogne's Scarlet, Gravenstein, and Sturmer Pippin. Ribston Pippin is not always commended for its regularity of cropping, but there is no doubt about its value if it can be induced to flourish. With me this year it has surpassed all others, and the reports from the Midlands point to the same fact. *F. Dixon, Elmcroft Gardens, Ripon.*

— In reply to Mr. Thomas Down, Hull, as to the variety near it in flavour to Cox's Orange Pippin, I advise him to plant Margil, which, although not ripening any earlier, does well on the Paradise stock, and is best as an espalier. As for districts more to the north of the kingdom, earlier-ripening sorts are a clear advantage—I mean Kerry Pippin, a variety ready in September. It is of the richest flavour, and, although small, it is pretty, and is prolific on the Paradise stock. Another very pretty but small variety of delicious flavour is Benoni (American), to eat from the tree in September. Also Lady Sudeley, introduced some twelve years ago by Mr. Bunyard, should be in every garden, ripening its fruit in August and September—juicy and rich, as well as very productive and handsome; it bears on the points of the branches, like Irish Peach, and is best eaten from the tree. Mother (American) is also to be recommended; it has a rich soft flesh, and ripens in October. A bolder variety, and extremely handsome, is Gravenstein, which forms a large pyramid; the fruit is high-flavoured, although sub-acid. The heavy supplies America sends us annually of this originally German variety are surpassed in flavour by the home-grown article, ripening in September and October. The sugary Grand Sultan or Transparent is a pleasing earliest Apple. In conclusion, I will only name Devonshire Quarrenden and Worcester Pearmain, as probably too well known already to require describing and recommending. A little Sussex Apple, Colonel Vaughan, is the prettiest sight to see a crop of on a pyramid, in this respect similar to Worcester Pearmain. *H. H. R., Forest Hill.*

AUTUMN v. SPRING-DIGGING.—Your able and instructive article on "Autumn v. Spring-digging" in the last issue of the *Gardeners' Chronicle*, will doubtless be read with pleasure by many thinking and experienced cultivators of the soil. May be many persons have experienced some corroboration of the soundness of the methods advocated. In reading the article in question, the thought occurred to me that it might be worth my while to mention what was communicated to me only a few weeks ago by a friend in South Norfolk, but in his case it was autumn v. spring-ploughing; but practically, from a cultivator's point of view, it is one and the same thing. When I visited him he was busy drilling Wheat, and our conversation turned on the cultivation of the soil, and agricultural crops and prospects. Eventually he told me of his experience this year of autumn and winter ploughing, and the resulting crops. Neglect of autumn ploughing was a case of necessity with him; so he claimed no credit for the method or the results therefrom. His soil is a sandy loam resting on sand and red gravel. Last autumn two portions of different fields were left unploughed, and subjected to a deal of trampling and carting throughout the winter. A certain amount of annual vegetation had likewise taken possession of the unploughed ground. Early this spring the two fields were ploughed over, and one was at once sown with Barley, and the other planted with Potatoes. During the summer the crops on the spring ploughed portions of the fields, become noticeable, having darker and more vigorous growth, and all through the summer they maintained it, and finally gave a much better yield of grain and tubers than the autumn-ploughed portions. This so favourably im-

pressed him, that immediately after harvest this year, he sowed his stubbles with Vetches and Mustard, "not mixed," and is now feeding them off with sheep, and intends letting the greater portion of it remain unploughed until seed-time next spring, but for the sake of another experiment, he will autumn-plough a small portion to note the results again, and if satisfactory, he says he will give up autumn ploughing for crops that are sown in the spring. What is true on a large scale is equally so of a small area. In gardens where one has a clayey loam to contend with, autumn digging becomes almost a necessity, for it would be nearly impossible to obtain satisfactory seed-beds without the ameliorating influences of winter frosts; but it is not so with sandy soils. If the above facts can be yearly relied on, what a saving of labour could be effected in the cultivation of light soils, besides the retention of so valuable a manure as the element nitrogen, one of the most expensive and least abiding. *J. Easter, Nostell Priory Gardens.*

FLOWERS IN SEASON AT PENZANCE.—Hoping it may interest the readers of your paper, I send a few facts relative to plants in bloom at this season of seasons. First and foremost have been the Chrysanthemum shows at Penzance, Truro, and elsewhere; but going into the first and last nursery in England, at Penzance, I find that Mr. Hedley Fox has still some plants of *Lobelia cardinalis* var. *Queen Victoria*, which are showing splendid blooms; also of *Kniphofia grandis*, *Dahlia*s, and all in vigorous health; and lastly, *Chrysanthemums*. Has our mild and equable climate at Penzance all to do with the happy state of things of our floral friends, to-day? *A. Hemwood Teague, F.L.S.* (Judging from our correspondence, Cornwall has just now no monopoly in this matter. Ed.)

BELGIUM.

SPECIAL EXHIBITION OF CATTLEYA LABIATA AT BRUSSELS.

An exhibition of *Cattleya labiata* (*Warocqueana*) was organised by the Brussels Orchidéenne, and held on November 7, 8, and 9. On this occasion the large hall of L'Horticulture Internationale looked very beautiful with the Orchids, *Chrysanthemums*, *Palms*, *Tree Ferns*, and other foliage-plants, displayed in it. The exhibition, in fact, was in every way successful.

The jury (M. Kegeljan of Namur, President) awarded:—*Objet d'Art*, 1st class, to L'Horticulture Internationale (M.M. Linden). This exhibit occupied a stage 65 feet long, and included some fine species and hybrids, among them good specimens of *Cattleya labiata*, a number of fine varieties, including John Schultz, with a wonderful depth of colouring; *Marmorata*, as curious as it is interesting and beautiful; *Melusine*, of a charming wine-red colour, with a yellow lip; also *C. gigas*, with six fine large flowers, rare at this season; *Oncidium Marshallianum*, with a large cluster of forty flowers, with wide divisions, and of brilliant colouring; *Odontoglossum crispum* in variety, one plant showing an unusual number of spots and markings; another, well-shaped, white, with cream and fawn shadings; *Cypripedium bellatulum* × *Boxalli*, a pretty hybrid; *Oncidium ornithorhynchum album*, always rather rare; *Cattleya maxima*, some varieties very beautiful; *Odontoglossum nubilosum*, with all the parts speckled with little rose-coloured dots; *Oncidium St. Legerianum*, *Cattleya aurea*, with a large flower and well-coloured lip; and *Miltonia Bluntii* *Lubbersiana*, remarkable for size and colouring. There were also numerous *Vanda corulea*; *V. Sanderiana*, an excellent variety; *Cypripedium in-signe* var. *Lucianum*, one of the best of the insigne group known; *C. Lebrunianum*, *Laelio-Cattleya* × *illuminata* (C. Warneri × *Laelia purpurata*), a fine flower in size and colouring; *Cypripedium insignis* *Lindeni*, much admired; and *Sobralia Lindeni* from Peru, now, snow-white, the lip handsomely ornamented with purple radiating stripes. These Orchids were tastefully grouped with *Palms*, *Ferns*, *Maranta*, *Dieffenbachia*, *Phyllotenusium*, *Leea*, *Heliconia*, *Alcornoia*, and *Dracena*, and with flowering *Chrysanthemums*, which produced a curious effect.

One group in the centre of the hall included a fine *Cocos* in the centre, with a base of *Palms*, *Ferns*, *Aspidistra*, and *Dracena*; on this background, the *Cattleyas* and *Chrysanthemums* showed up well.

M.M. Lucien Linden & Co., covered a staged with 300 specimens of *Cattleya labiata*, which secured them an *Objet d'Art*, 2nd class. There were certainly 3000 blooms, many excellent varieties being represented. The Marquis de Wargny, and Mdlle. Trieu de Teridonck, each obtained a 3rd class award for *Cattleya labiata*; a Bronze Medal was awarded to M. Kierstein of Bordeaux, also for specimens of this plant.

A 1st class Diploma of Honour was allotted for an interesting specimen of *Odontoglossum Rossi* var. *De Bosccherianum*, to M. Guill. de Boscchère; the sepals are yellow; the sepals amply spotted on a yellow ground; a very curious variety.

M. Georges Martin, of the Château d'Olivet, obtained a Diploma of Honour with the congratulations of the jury for

a noteworthy exhibit of seedling *Cattleyas* raised by himself. M. Gibex obtained a Diploma of Honour for a hybrid *Cypripedium Argus* × *C. villosum*; and the Marquis d'Applaineourt a Botanical Certificate for a fine group of *Cymbidium* or *Cypripedium elegans*. *Ch. De Boscchère.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

November 9, 10, and 11.

(See also p. 346.)



CHRYSANTHEMUM SHOWS at the Royal Aquarium, Westminster, Kingston, Birmingham, and many other places on Tuesday last, coupled with the ordinary fortnightly meeting of the Committees of the Royal Horticultural Society at the Drill Hall, ensured a busy day for horticulturists. We do not remember to have experienced a more busy day for some years past. But we are not all journalists, and probably some gardeners were not at all sorry to be able to visit the annual Exhibition of the National Chrysanthemum Society upon a day when the business of the Royal Horticultural Society Committees compelled them to come to town.

COMPETITION BETWEEN AFFILIATED SOCIETIES.

There were three Societies in contest this year for the honour of obtaining the Challenge Shield in the First Class. It is for an exhibit of forty-eight blooms, in equal numbers of Japanese and incurved varieties. £10 accompanies the Shield, and the other prizes are considerable. One or more members of each competing society may contribute blooms. The laurels on this occasion were taken by the Bromley and District Chrysanthemum Society, and they were won by an exhibit worthy the class. Japanese and incurved were almost equally good. The Sittingbourne and Milton Gardeners' and Amateurs' Association was 2nd, and the Highbridge Horticultural Society 3rd.

OPEN CLASSES.

Thirty-six Incurved blooms distinct.—The Holmes Challenge Cup and 1st prize was won by Mr. W. Mease, gr. to A. Tate, Esq., Downside, Leatherhead. His blooms were—*Back Row*—Duchess of Fife, Violet Foster, J. Agate, Dorothy Foster, Major Bonaffon, Mrs. R. C. Kingston (very good), William Tunnington, Lord Alcester, Lady Isabel, a very large but rather flat bloom; Robert Petfield, C. H. Curtis, capital bloom; and *Ma Perfection*. *Centre Row*—Robert Cannell, Jeanne d'Arc, Globe d'Or, one of the weakest flowers in the stand; Golden Empress, Lord Rosebery, Jno. Lambert, Violet Tomlin, Queen of England, M. P. Martignac, Lucy Kendall, Empress of India, and Jno. Doughty, a bloom with very poor centre. *Front Row*—Princess of Wales, very neat and pretty, Brookleigh Gem, Empress Eugénie, George Haigh, Bonnie Dundee, Noel Pragnell, very fine; Princess Beatrice, Mrs. Hepper, Alfred Siler, Mrs. Heal, C. B. Whitnall, and a very nice bloom of Miss Haggas. Though the two best collections of incurveds required little judging as between one and the other, at the same time the exhibit from Mr. W. Higga, gr. to J. B. HANKEY, Esq., Fetcham Park, Leatherhead, was one deserving of great commendation. He had a good number of fine flowers, of which the following may be mentioned—Duchess of Fife, Major Bonaffon, J. Agate, Chas. Curtis, Empress of India, Prince Alfred, Jeanne d'Arc, Mrs. S. Coleman, and Bonnie Dundee. The better of the other two exhibitors was Mr. H. Butcher, gr. to C. J. Buss, Esq., Lodge House, Smeeth, Ashford, Kent.

Twenty-four Incurved blooms, distinct.—Of four competitors in this class, the 1st prize was won by Mr. F. G. Foster, Brockhampton Nurseries, Havant. Some of the best blooms in this collection were J. Agate, Mrs. R. C. Kingston, *Ma Perfection*, Duchess of Fife, Miss Violet Foster, Mr. J. Kearn, and Major Bonaffon. The 2nd prize was taken by Mr. H. Butcher, gr. to C. J. Buss, Esq., and the 3rd by Mr. C. W. Knowles, gr. to Mrs. C. Egeaton, Solna, Southampton.

Twelve Incurved blooms.—Exhibitors in the preceding class could not enter in this one. There were eight collections staged, and the winner of the 1st prize proved to be Mr. J. W. Barks, gr. to P. RALLI, Esq., Alderbrook, Cranleigh. All of the blooms in this stand were of first-rate merit, being of good size, neat, and well-built blooms; they were *Empress of India*, Lord Wolseley, J. Agate, Golden Empress, Lord Alcester, Princess of Wales, Miss M. A. Haggas, Mrs. R. C. Kingston, Violet Tomlin, Mrs. S. Coleman, Mrs. Heal, and Lucy Kendall. The 2nd prize exhibit contained some large, fine blooms, and some inferior ones. It was staged by Mr. F. King, gr. to Mrs. McIntosh, Havering Park, Romford. The best flower was a very fine one of C. H. Curtis. The 3rd prize was taken by Mr. A. J. Driver, gr. to the Misses DAVIES, Bridgend House, Stonehouse, Gloucestershire.

Six Incurved blooms, one variety.—There were eleven exhibits, and the only varieties staged were C. H. Curtis, Empress of India, and Queen of England. All the prizes were obtained by the variety C. H. Curtis. The best lot were from Mr. W. Teboy, gr. to Mrs. RYCHOFF, Everlands, Sevenoaks, being the best blooms of this variety that we have yet noticed; Mr. F. King, gr. to Mrs. McIntosh, Havering Park, Romford, was 3rd.

Forty-eight Japanese blooms, distinct.—It was an extraordinarily fine collection that obtained the Holmes Memorial Challenge Cup and 1st prize for Mr. W. MEASE in this class. To prevent, we presume, the usual flat appearance of the exhibits, Mr. Mease raised the centre flowers highest, and then gradually fell to either end. *Back row*—Madame Carnot, Etoile de Lyon, Mrs. W. H. Lees, M. de la Rochetiers, Baron Ad. Rothschild, a bloom of pleasing distinctness to all of the others in the exhibit; J. Brooker, Mrs. C. H. Payne, Vivand Morel (very large), Mons. Paskoucke, Eva Knowles, Pride of Exmouth, A. H. Wood, the sport from Primrose League; Lady Hanham, the new and charming sport from Vivand Morel; Simplicity, Australia, and a Premier bloom of the yellow sport from Madame Carnot. *Centre row*—Lady Ridgway, Mons. Hoste, Edith Tabor, Mons. Grays, Mrs. J. Lewis, E. Molyneux, very fine in colour; Australian Gold, M. Chenon de Leché, Mrs. Chas. Blick, Chas. Davis, Mdlle. M. Hoste, Mrs. G. Carpenter, Mutual Friend, Julie Scaramanga, Mrs. Dewar, and Phoebe. *Front row*—Mrs. Weeks, a beautiful flower when done well; Mons. C. Moll, Col. Chase, Sunstone, Mdlle. M. A. de Galbert, Modestum, Madame M. Ricoud, Baron Tait, Niveum, Mrs. Brims Ironside, Madame Gustave Henri, N. C. S. Jubilee, Miss E. Teichmann, Robt. Powell, Robt. Owen, Viscountess Hambleton. This excellent collection was followed in the prize list by one from Mr. H. Perkins, gr. to the Hon. P. W. D. SMITH, M.P., Greenlands, Henley-on-Thames. Mr. Perkins' flowers were of less size, and generally they were very equal in point of merit with each other. Australian Gold, Edith Tabor and a few others were, however, the best. For 3rd place, P. WATERER, Esq., Fawkham, Kent, just beat Mr. J. F. McLEOD, Dover House Gardens, Rochester.

Thirty-six blooms of White, Yellow, and Crimson Japanese.—These blooms were to be shown in twelve varieties, three blooms of each, on ordinary show boards, and six inches of clear stem to be above the boards. Chrysanthemum foliage of any variety might be shown as a separate stem attached to each bloom. The contest lay between Mr. N. DAVIS, and Mr. W. G. GODFREY, Exmouth Nurseries, Devon, and the advantage lay with the first-named. Each collection presented a commendable appearance, and should encourage the Society to again solicit this and similar less common methods of displaying the blooms. Mr. DAVIS alternated his tints thus, White, Crimson, Yellow, throughout the length of the board. His varieties were, Whites, Madame Carnot, Mr. Weeks, Mdlle. Thérèse Rey, Western King, Crimsoms, Beauty of Castlewood, Dorothy Shea, R. Dean, and Jno. Neville, Yellows, Phoebe, A. H. Wood, Edith Tabor, and Modestum; all of the flowers shown were fine, those of Western King being particularly so. Mr. GODFREY had all his blooms of one colour together, an arrangement we should be sorry to condemn, because the differences in the similarly coloured varieties are by this method the better demonstrated. The 1st prize of £1 was accompanied with a handsome Memorial Challenge Cup, presented by the Trustees of the Turner Memorial Fund.

Twenty-four Japanese blooms, distinct.—Mr. W. Mease, gr. to C. H. BERNERS, Esq., Woolverstone Park, Ipswich, beat five other exhibitors in this class, with a most praiseworthy lot of blooms, good in size, colour, and finish. To specify a few of the best we may mention Madame Carnot, Etoile de Lyon, Edith Tabor, Australia, Modestum, Mdlle. Ad. Moulin, Phoebe, capital in colour; C. Davis, Rose Wynn, and M. Chenon de Leché. It was a collection of blooms of very fine merit also that won 2nd prize for Mr. B. Kenyon, gr. to A. F. HILLS, Esq., Monkham, Woodford Green, Essex, very even in size and merit, the varieties staged call for no special mention. Mr. H. BURCHER was 3rd.

Twelve Japanese blooms, distinct.—This class accounted for a prodigious lot of first-class blooms; there were upwards of twenty collections staged in competition, and we should suppose the judging of such a class was not an easy matter. However, it had to be done, and eventually a collection of blooms from Mr. W. MESENGER was placed 1st. His blooms were Madame Carnot, E. Molyneux, Modestum, Australia, Madame G. Henry, Internationale, Australian Gold, Mrs. C. H. Payne, Phoebe, Miss E. Teichmann, M. E. André, and Edith Tabor. The blooms were all good, and that of Internationale was very fine in point of colour, as was E. Molyneux. The 2nd prize was obtained by Mr. H. SHOESMITH, Clarence Nurseries, Woking, for a very remarkable lot of blooms that lacked coloured varieties, there being too many whites and yellows; had it not been for this the collection would have been very hard to excel. The 3rd prize went to Mr. B. Kenyon, gr. to A. F. HILLS, Esq.

Six Japanese blooms, any colour except white.—There was much competition in this class, and the 1st prize was awarded to six excellent specimens of Phoebe, shown by Mr. J. McKenzie, gr. to F. S. CORNWALLIS, Esq., Little Maldstone; 2nd, Mr. T. H. Lodge, gr. to Mrs. M. H. Hockerill, Bishop's Stortford, for six blooms of Edith Tabor.

Six Japanese blooms, hairy-petalled varieties, distinct.—Mr. Jno. Justice, gr. to Sir R. TEMPLE, The Nash, Kempsey, was 1st, and showed the well-known Hairy Wonder and Mrs. De Ward; also Mrs. W. J. Godfrey and White Swan, both white flowers; Princess Ena, mauve-coloured, very good; and Vancouver, pink, but not very hirsute. The 2nd prize went to Mr. W. Batchelor, gr. to C. BILLYARD TRANK, Esq., Hatfield Park, Uxbridge.

Six Japanese Blooms, one variety, white.—The best bloom in this class were those of Madame Carnot, six very fine specimens of which were shown by Mr. NORMAN DAVIS. There were eight other collections, and with the variety Mrs. Chas. Blick, the 2nd prize was won by Mr. T. H. Lodge, gr. to Mrs. MESEY, Bishops Stortford. The variety Mdlle. M. A. de Galbert, obtained the 3rd place.

Six Japanese Incurred Blooms, distinct.—There was not so much competition in this class as might have been expected. The 1st prize was won by Mr. W. ROBINSON, who showed Oceana, Australia, Western King, Duke of Wellington, Pride of Madford, and Lady Ridgway.

Twelve large flowered Reflexed blooms.—These varieties rarely find many exhibitors in these days. On the occasion under notice there were two in this class, and the 1st prize was taken by Mr. W. ROBINSON, gr. to the Right Hon. Lord LUDLOW, Heywood, Westbury, Wilts. There appeared to be nothing new in the varieties staged, and the 2nd prize was awarded to the other exhibitor, Mr. G. W. FORBES, gr. to Madame NICOLA, Itenge House, Surbiton.

Twenty-four large-flowered Anemone blooms distinct.—There were six contributors in this class, and the best proved to be Mr. JNO. JUSTICE, gr. to the Right Hon. Sir R. TEMPLE, Bart., The Nash, Kempsey. His varieties were W. W. Astor, Madame Lawton, Caledonia, Rouche Lyonnaise, Jno. Bunyan, Mdlle. Cabrol, Mr. H. Gardner, and Sir W. Raleigh.—Robin Adair, Queen Elizabeth, Enterprise, Dame Blanche, Nelson, Owen's Perfection, Delaware.—Junon, Mrs. J. Benedict, Gladys Spaulding, Lady Margaret, La Denil, Fleur de Marie, Miss A. Lowe, and Empress. This stand presented a very pretty show, and most of the flowers were well staged. The 2nd prize was taken by Mr. W. Skoggs, gr. to A. MOSZLEY, Esq., West Lodge, Barnet; and the 3rd by Mr. A. IVEY, gr. to E. C. JONES, Esq., Hadley Lodge, Barnet.

Twelve large Anemone blooms, Japanese excluded.—There were again six competitors, and the 1st prize was won by Mr. J. JUSTICE with an elegant collection of blooms, including Junon, Delaware, Gladys Spaulding, Mdlle. N. Brum, Mrs. J. Benedict, Acquisition, Miss A. Lowe, Lady Margaret, M. C. Lebosqui, Cincinnati, Fleur de Marie, and Gluck. The 2nd and 3rd prizes were taken by Mr. A. IVEY, and Mr. W. RING, gr. to JAS. WARREN, Esq., Caple House, Waltham Cross.

Twelve Japanese Anemone blooms, distinct.—Mr. JUSTICE again took premier honours with good blooms of Mrs. Hugh Girdner, Sir W. Raleigh, Robin Adair, Mdlle. Cabrol, Queen Elizabeth, Nelson, Caledonia, Rouche Lyonnaise, Owen's Perfection, Jno. Bunyan, W. W. Astor, and Enterprise. Mr. W. SKOGGS was 2nd, and Mr. RING 3rd.

Twelve Pompons, distinct.—The Pompons are usually shown in sprays of three, with foliage attached. There were three exhibitors in this class, and Mr. T. CARYER, gr. to A. G. MEISSNER, Esq., Aldenholme, Weybridge, was adjudged best of these. He staged the following varieties: Rubro-perfectum, Prince of Orange, W. Westlake, Perle des Beauties, Osiris, Mr. Holmes, Mdlle. Marthe, President, Mdlle. E. Dorian, La Vogue, Pygmalion, and Toussaint Maricot. It was a first-rate collection of well-grown blooms, and the 2nd exhibit was little inferior. It came from Mr. W. ALDRIDGE, gr. to G. LUCY, Esq., Springfield House, Palmer's Green.

Single flowers.—There were five contestants in the class for twelve sprays of single flowers, three blooms to each spray. These flowers made a glorious display and are worth much more attention than is given them. The best came from Mr. W. ALDRIDGE, gr. to G. LUCY, Esq., who had very fine ones indeed. The varieties were Lady Churchill, Ewan Cameron, Springfield Beauty, Orange Beauty, Purity, Miss Brown, Miss May Braithwaite, Miss A. Munford, Rose Pink, Lizzie Mainwaring, Kate Williams, and Rev. E. W. Remfrey. The whole of these are worth getting by those who do not possess them. The 2nd prize collection was very close to the one just noticed in point of quality, and was staged by Mr. G. W. FORBES. Mr. FIELDGATE, gr. to the Duchess of WELLINGTON, Burihill, 3rd.

TRADE CLASS.

Thirty-six Blooms including twenty-four Japanese and twelve incurred.—The 1st prize was taken by Mr. W. WELLS, Earlswood Nurseries, Redhill, Surrey. In this collection one of the best blooms was Mme. Forlat, a beautiful white or pale lemon incurred bloom of fine size and build: Mrs. J. W. BARKA, a very fine sport from Edith Tabor; G. J. WARREN, Ella Curtis, Lady Hamham, Georgina Pitcher, with others, were interesting and good. The only other exhibit was one from Mr. NORMAN DAVIS, Framfield Nurseries, Sussex; President Nonin, Framfield Gem, and a few other novelties were staged in this collection.

PLANTS.

The best group of Chrysanthemums in pots mingled with foliage plants, and arranged for effect in a circle of 12 ft. in diameter, was adjudged to be one shown by Mr. J. SPINK, Summit Road Nursery, Walthamstow. It was a perfect sugar loaf in shape, and at the summit was a plant of Kentia Forsteriana. The plants were well grown, the blooms large, and there was little fault in the disposition of the plants, except in so much as the method is not the best. The 2nd prize was taken by Mr. W. HOWE, gr. to H. TATE, Esq., Park Hill, Streatham, and the 3rd to Mr. ED. DOVE, gr. to H. E. FAR, Esq., Bickley Hall, Kent.

Trained specimens.—The 1st prize exhibit in the class for six trained specimens of large flowered varieties was down-right excellent. The varieties were Florence Percy, John Shrimpton, John Lightfoot, Col. Smith, Glorioso, and W. Tricker. Those of Col. Smith, Jno. Lightfoot and Jno. Shrimpton were the best.

The best collection of four trained plants was from Mr. F. GILKS, gr. to A. MORRIS, Esq., Court Green, Streatham Hill. The varieties were Emily Silsbury, Col. W. Smith, Vivand Morel, and Mrs. E. S. Trafford. Mr. W. DAVEY, gr. to C. C. PAINE, Esq., was 2nd.

The best six standard trained Chrysanthemums were from Mr. D. DONALD. He had Eva Knowles, Cleopatra, Col. Smith, Chinaman, W. Tricker, and Miss Alice Luckman.

The best standard trained plants in a collection of four were from Mr. W. DAVEY, gr. to C. C. PAINE, Esq., Hildfield, Haverstock Hill, N.W., and he showed Col. Smith, Stanstead Surprise, Cleopatra, and W. Tricker.

The best six trained Pompon plants were also from Mr. D. DONALD, who had Black Douglas, W. Westlake, Scur Melanie, Yellow Martha, W. Kennedy, and Antonius. All of these were first rate.

The best specimen Chrysanthemum plant, any type, pyramidal trained, was a fine plant of Col. W. Smith, shown by D. DONALD, gr. to J. G. BARCLAY, Esq., Knoll Green, Leyton.

AMATEURS.

CUT BLOOMS.—DIVISION I.

Twenty-four Japanese, distinct.—Only two collections were staged, and the better one was from Mr. L. GOOCH, gr. to J. WICKHAM JONES, Esq., Troceter Lodge, South Norwood. The varieties Miss Dorothy Shea, M. Chenon de Leché, and Matthew Hodgson were best shown; Mr. JAS. STREDWICK was 2nd.

Eighteen Incurred, distinct.—Of three collections, that from Mr. C. E. WILKINS, Wellington, Swanley Junction, was best, but the quality throughout the class was not remarkable; Bonnie Dundee and Princess of Wales were the best blooms in the 1st prize exhibit.

Twelve Japanese blooms, distinct.—This class was the subject of a keen competition, and a very commendable lot from Mr. JAS. STREDWICK took 1st prize. In this stand the varieties T. Wilkins, Eva Knowles, A. H. Wood, Madame Carnot, and Phoebe were the best. The 2nd prize went to Mr. J. ACOCK, gr. to Mrs. BACON, Stoneleigh, Sutton, also a very good exhibit.

Six Japanese blooms, distinct.—Mr. W. PERRIN, gr. to C. W. RICHARDSON, Esq., Sawbridgworth, Herts, was 1st, who had really fine blooms of Madame Carnot, G. C. Schwabe, Madame Gustave Henry, Australia, G. J. Warren, and Etoile de Lyon; 2nd, Mr. JAS. STREDWICK. The best six blooms of Japanese one variety were some good specimens of Phoebe shown by ED. SMITH, Esq., Ingleside, Chatham; and with Vivand Morel, Mr. J. STREDWICK, Silver Hill, St. Leonards, was 2nd.

Twelve Incurred blooms, distinct.—Of four exhibitors the best was Mr. C. E. WILKINS, who had a very even lot of blooms of medium size and finish. Mr. WILKINS also won in the class for six blooms. The 2nd prize for twelve went to Mr. C. GODDARD, gr. to W. H. FRANCIS, Esq., Broomfield, Sutton.

Six Incurred blooms one variety.—The 1st prize was awarded to the variety Mrs. R. C. KINGSTON, shown by Mr. WILKINS.

DIVISION II.

Eighteen Japanese, distinct.—Mr. HENRY LOVE, 1, Melville Terrace, Sandown, Isle of Wight, had a stand of very good blooms, including some varieties not frequently staged in exhibition. Mr. J. LOVE was the only other exhibitor.

Twelve Japanese Blooms.—Mr. HENRY LOVE again led here followed by Mr. A. R. KNIGHT, 63, Hardinge Road, Ashford, Kent.

Six Japanese Blooms, distinct.—Mr. H. A. NEEDS showed well in this class, staging the following varieties: Chas. Davis, Miss Elsie Telchmann, Edith Tabor, Madam Carnot, Phoebe, and M. Chenon de Leché. 2nd, Mr. W. E. REEVE, Lyndhurst, Maybury Road, Woking.

The best six blooms of Japanese of one variety was an exhibit of Mdlle. Th. Rey, from Mr. W. E. REEVE, Lyndhurst, Maybury Road, Woking.

Incurred Blooms.—The class for twelve blooms distinct was won by Mr. A. R. KNIGHT, who included a nice specimen of Mrs. R. C. KINGSTON.

MAIDEN GROWERS.

There were a few classes for subscribers who have never won a prize previously at the National Chrysanthemum Society's Shows. For six Japanese blooms distinct, Mr. R. CHAMBERLAIN won 1st prize; and for three blooms distinct the 1st prize was taken by W. T. NEAL, Esq., Chessalon, Woking. Mr. S. ELY, gr. to H. H. GARDNER, Esq., had the best three bunches of Pompons.

SPECIAL PRIZES.

For the special prizes offered by Mr. H. J. JONES for six vases of Japanese Chrysanthemum blooms with twelve inches of stems above the buds, Mr. T. H. LODGE was the best exhibitor, showing varieties with stiff stems that needed no supports.

The class for which special prizes were offered by P. WATERER, Esq., for a specimen Chrysanthemum plant grafted with not fewer than three varieties, was won by Mr. D. DONALD, who had a plant bearing the following varieties: John Lightfoot, Chas. Davis, and Vivand Morel. Another exhibitor had a plant with four varieties engrafted, but exhibiting less good culture.

The special prize offered by Mr. J. T. SIMPSON, for the premier bloom of Japanese Chrysanthemum selected from the entire exhibition, was won by a magnificent bloom of Yellow Madams Carnot in the winning stand of 48 Japanese blooms, shown by Mr. MEASE.

The prizes offered by Mr. W. Wells for six sprays of single flowered Chrysanthemums did not bring such satisfactory exhibits as they should have done.

TABLE DECORATIONS, BOUQUETS, ETC.

The best exhibit in an open class for a table of Bouquet Wreaths, &c., was won by Miss NELLIE EBLEBACH, Stoke Newington, followed by Messrs. HARWOOD BROS., Balham.

There was extraordinary competition in a class for three Espergues of Chrysanthemum blooms, suitable for table

decoration, there being about fifteen exhibits staged. Of these a trio from Mr. D. B. CRANE, 4, Woodview Terrace, Archway Road, Highgate, were adjudged the best; and Miss C. B. COLS, The Vineyards, Feltham, also showed admirably.

The best two vases of Chrysanthemums were shown by Mr. MARK WEBSTER, gr. to E. J. PRESTON, Esq., Kekey Park, Beckenham. Mr. MARK WEBSTER had also the best pair of hand bouquets or posies of Chrysanthemums.

The 1st prize for a hand-basket of Chrysanthemums in a class limited to ladies was won by Miss EASTERBROOK, Fawkham, Kent, from more than half a dozen competitors. The blooms used were exclusively of a variety that reminded us of Princess Clothilda, with a few Asparagus spray. Mr. J. BROOKE, gr. to W. J. NEWMAN, Esq., Totteridge Park, Herts, had the best vase of six blooms of Japanese Chrysanthemums, showing Madame Carnot.

The remaining class in this section was for a hand-basket of natural autumn foliage and berries, and a very pretty arrangement obtained the 1st prize for Miss E. WADSWORTH, Brook House, Basingstoke.

FRUIT AND VEGETABLES.

Although the Society has no titular connection with fruit or vegetables, there is generally some very good produce exhibited at the November show. One of the Special prizes this year was for a collection of Apples, to consist partly of varieties in cultivation on previous to 1837, and of others introduced during the past thirty years. The 1st prize was won by Mr. McKENZIE, gr. to F. B. CORNWALLIS, Esq., Linton Park, Maidstone. The best exhibitors of Grapes were Mr. W. HOWE, gr. to H. TATE, Esq., Park Hill, Streatham; Mr. W. GOULDER, Frome, Somerset; and Mr. W. TIDY, gr. to H. D'ARCY, Esq., Stanmore Hall, N.W.

Mr. A. J. THOMAS, Burgess Hill, Rodmersham, and Mr. G. Goldsmith, gr. to Sir E. G. LODGE, Bt., Leonardslee, were successful exhibitors of Pears and Apples.

Potatoes were shown well by Mr. SILAS COLE, gr. to EARL SPENCER, Althorp Park, Northampton; and Mr. E. BECKETT, gr. to Lord ALDSHAM, Aldenham House, Elstree, had 1st prize for a fine collection of vegetables.

Messrs. Sutton & Sons, Webb & Sons, and Mr. Dorrill and others offered special prizes for vegetables.

NON-COMPETITIVE EXHIBITS.

Messrs. B. S. WILLIAMS & SON, Upper Holloway, staged a pretty group of stove plants, including a fine lot of Orchids in flower, and also well-flowered plants of Begonia Gloire de Lorraine, and several species of Erica. Some of the Crotons were very fine.

Messrs. JNO. LAING & SONS, Forest Hill Nurseries, London, S.E., had a collection of Apples and Pears, and a few plants of Bouvardias, Begonias, &c., in flower.

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, furnished one of the cross tables with fine Chrysanthemum blooms, plentifully relieved with Ferns and pretty foliage plants. Many novelties and some seedlings were shown, the best of which are noticed on p. 340. Also a pretty group of Chrysanthemums in pots, staged in tasteful manner under the large organ; and adjoining this was a record stand of Chrysanthemum blooms from Mr. NORMAN DAVIS, Framfield Nurseries. Western King was capitally shown in about a dozen blooms in this exhibit, and there were extra large blooms of Madame Carnot and many novelties.

Another table was occupied by an exhibit from Mr. THOS. S. WARE, Hale Farm Nurseries, Tottenham, which consisted of Chrysanthemum blooms and Ferns. Some Chrysanthemum blooms and winter-flowering Carnations came from Mr. E. G. RAID, nurseryman, Beckenham Hill.

Messrs. SUTTON & SONS, Reading, exhibited heaps of fine Potato tubers of varieties which the firm believe to be best adapted to resist diseases. Nearly forty distinct varieties were shown, including Sutton's Seedling, Windsor Castle, Nonsuch, Satisfaction, Reliance, and others equally good. The tubers were of the best appearance possible.

A nice collection of Apples and a few Pears were noticed from Messrs. S. SPOONER & SONS, Hounslow Nurseries; and a collection of hardy fruits, Violets, &c., from Messrs. W. & J. BROWN, Stamford, Peterborough and Grantham.

Mr. H. DEVERILL, of Banbury, exhibited some of his remarkable Onions; also Leeks, Celery, Parsnips, Carrots, and other vegetables. Mr. H. BERWICK, Sidmouth Nurseries, Devon, exhibited some very highly coloured Apples and a few Pears.

Messrs. H. CANNELL & SONS, Swanley, Kent, made an exhibit of sprays of Zonal Pelargoniums as bright and charming as ever, always very attractive when the fog days have commenced. They had also a rare lot of Chrysanthemum blooms tastefully set up over a groundwork of Ferns. Amongst these were many novelties, including some of the Continental sorts. The new green flowered Japanese, Madame Edmund Rogers, was represented by three good specimens. A bank of Cannas in many varieties completed the exhibit.

Mr. W. WELLS, Earlswood Nurseries, Redhill, Surrey, had a most commendable group of Chrysanthemum plants in flower, remarkable for the size and freshness of the blooms. This was one of the finest exhibits on the ground floor, and displayed a considerable number of novelties, which have been noticed on p. 340.

Mr. B. LADHAMS, Shirley Nurseries, Southampton, showed a fine lot of blooms of a new decorative Chrysanthemum named Gold Elsie; also Gaillardia blooms, and a few other hardy flowers.

Mr. ROBT. OWEN'S Chrysanthemum flowers from Maldenhead furnished a good-sized table, and many novelties were well shown in this exhibit. Some winter-flowering Carnations in pots from Messrs. CRANE & CLARKE, Hillside Nursery,

March, Cambridgeshire, were scarcely in full flower, but the culture of the plants had been good.

Messrs. W. CUTBUSH & SON, Highgate Nurseries, London, made an extensive exhibit in the gallery composed of Chrysanthemums in pots, also a fine lot of Begonias, Gloire de Lorraine, Ericas, Oranges, &c.

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, displayed a fine lot of Chrysanthemum blooms, each cut with good stout stem, and most of them representative of new varieties, also winter flowering Carnations.

Mr. JNO. RUSSELL, nurseryman, Richmond, had a group of Ivies in pots, exhibiting many diverse varieties. Other stands represented several of the horticultural sundriesmen, various horticultural manures, patent watering-cans, garden labels, &c.

ROYAL HORTICULTURAL.

NOVEMBER 5.—A meeting of the FRUIT AND VEGETABLE COMMITTEE was held on this date at the Royal Horticultural Society's Gardens, CHISWICK.

Present: Mr. H. Balderson, in the chair; the Rev. W. Wilks, Secretary; and Messrs. J. Wright, W. Bates, J. Smith, A. F. Barron, R. Fyfe, W. Farr, and A. Dean.

Four late varieties of Potatoes, tubers of which were seen lifted at a previous meeting, having been cooked, were tasted. Of these Sutton's Supreme and Vert's Diamond Jubilee, both cooking well, but not of high flavour, were awarded two marks. Deficiency in flavour largely characterises modern Potatoes, especially heavy croppers. The best-flavoured variety tasted at Chiswick this season was one sent for trial from the Canary Islands, having much of the Ashleaf character. An extensive collection of Kales, two long rows of each being grown, were next seen. In connection with these, it was noticeable, and the matter merits the fullest scientific enquiry, that all the Breda or Asparagus section, including Ragged Jack, Lapland, and Delaware, in all some ten lots, had almost disappeared, having been eaten up by a fungus [probably a slime-fungus, Ed.] This pest, however, did not affect all the curled Kale section, nor yet the Chou de Milan, or Cottagers' Kale.

The group comprised forty-six stocks, and largely diverse. Of these the following received three marks, or High Commendation: Cutbush's famous strain of tall Scotch Curled, very dark leaved; Brydon's Selected Green Curled (Kent & Brydon), a capital strain of the tall Scotch, but of lighter hue; Dobbie & Co.'s Victoria Kale, a splendid and solid form of the tall Scotch, one of the very best. Jas. Veitch & Son's capital strain of variegated Kale, heads to be seen at the Drill Hall later on. Cottagers' Kale, a good and even stock (C. Turner); Chou de Milan, a first-rate stock of this fine late hard sprouting Kale, from Watkins & Simpson. Culzean Castle, another extra strong-growing stock of the tall curled Scotch (Hurst & Son); and Late Hearting, a dwarf and compact hearting of a semi Savoy type (Hurst & Son). Two Marks, or Commended, were given to Dobbie & Co.; Dwarf Purple Curled, and to Barr's exquisite Purple Curled. These, however, are identical, and are the same as the Purple Arctic or Labrador Kale, well known in commerce.

Three varieties of Beets were seen, but were, whilst clean and even stocks, not of high-class root quality, and inferior to well-known established varieties.

A bed of Parsley also was seen, but the stock was a poor one. A trial of Parsley next year may be worthy consideration.

A large trial of Onions has, so far, been conducted, that several dozen rows of plants, 3 feet apart, are well up; and it is proposed to sow a row of each variety beside these in the spring, and also to transplant one row besides from each autumn-sown variety. A few stocks of Brussels Sprouts were also seen, but they were coarse in growth, and very uneven in quality—much inferior, in fact, to what may be seen in the market-fields. Perhaps the Chiswick soil is too rich and porous; but it is the case that firm, well-trodden soil, not too highly enriched, usually give the cleanest stems, and the best Sprouts.

A trial of Celeries is to be determined at the Drill Hall when blanching is complete, and the winter has tested endurance.

NOVEMBER 9.—GENERAL MEETING.—This meeting, owing partly to the late period of the year, and to the great amount of interest centered in the Show of the National Chrysanthemum Society in a neighbouring building, was a small one, and especially as regarded the number of Orchids and Chrysanthemums staged. The fog and darkness prevailing, made an examination of the various objects very difficult at times.

Floral Committee.

Present: W. Bain, Esq., in the Chair, and Messrs. J. D. Pawle, J. W. Bennett-Poë, C. E. Pearson, J. F. McLeod, J. Jennings, C. J. Salter, J. H. Fitt, Chas. Jeffries, E. Mawley, and R. M. Hogg.

Messrs. HUGH LOW & CO., Bush Hill, Enfield, and Clapton, showed Carnation Mathew's Winter Red, said to be an improvement on the well-known Winter Cheer, in that it is a better winter flowerer; but it is of no use for summer blooming. About fifty plants in 48's were shown. The habit is compact and short, and foliage is freely produced. The flower is of good form, with cupped petals, and the colour a

F. F. THOMPSON, Esq. (gr., Mr. T. Mann), of Pentstemon Seedlings of average merit. CLARKE, March, Cambridgeshire, exhib-

ited a few plants of Tree Carnation Queen Victoria, with flowers of a shade of pink, double, habit of the plant tall, evidently a free bloomer. They also showed plants of the tall-growing white-flowered Bouvardia Humboldtii grandiflora, a striking variety, with large blooms, receiving for this an Award of Merit.

Mr. R. GULZOW, Melbourne Nurseries, Bexley Heath, Kent, showed a group placed on the floor, consisting in the main of varieties of Dracaena, including D. Sanderiana, a magnificent plant, with sixteen stems 6 feet high, and several smaller ones; D. albo-lineata, a narrow-leaved variety, with white and green leaves, and graceful in habit (Award of Merit); D. indivisa Burtons, resembling the type in all respects but colour, which is bronzy-green, with a suspicion of red in it (Award of Merit). The group consisted of the best of modern varieties. Two 6-feet high examples of D. Doucetii, furnished with leaves down to the pots; several Crotons with pendent foliage, a few Palms and Cycads, complete the list of the plants (Silver-gilt Flora Medal).

A group of Chrysanthemums, including Japanese, incurved, single-flowered and reflexed varieties, came from Mr. G. Wythes, gr. to Earl Percy, Stion House, Brentford. Many of the Japanese and incurved flowers were above ordinary form. The group was nicely relieved with Maidenhair Ferns in small pots; and the flowers were placed in two's and three's in bottles, and were mostly fresh-looking specimens (a Silver Banksian Medal).

Mr. JOHN RUSSELL, nurseryman, Richmond, Surrey, placed a group of Tree Ivies of diverse species upon the floor of the Hall, some of the examples reached a height of 5 feet to 7 feet; several of them were loaded with fruits. The silver and the yellow variegated forms were very telling objects. One tall silver variegated example had its stem surrounded with a framework that supported a mass of neatly-trained shoots of the common Ivy, and some others of dwarf stature were similarly treated (Silver Banksian Medal).

Spra of Vitis heterophylla humulifolia in fruit came from A. KINGSMILL, Esq., Harrow Weald. The bunches are short, in some cases very short, and grow axillary on the current year's shoots, and the sky-blue fruits, of the size of Red Currants, are thinly set on the stalks. The leaves are small, with three and five laps. It was grown outside, in front of a glass corridor.

W. W. MANN, Esq., Ravenswood, Bexley (gr., Mr. J. Simond), showed Japanese Chrysanthemum Cyril C. Mann, a white sport from the orange-coloured Col. W. B. Smith. The flower is a creamy-white, an increase of colour being perceptible towards the centre.

Sir TREYOR LAWRENCE, Burford Lodge, Dorking (gr., Mr. Bain), showed Sonerila longifolia Lady Burton, a bronzy leaf densely spotted with white, and patches of the same (Award of Merit). The President of the Society showed an incurved variety of Chrysanthemum named Brunt, of a deep orange colour, a massive flower; also C. Mrs. J. Gardiner, a bright yellow variety belonging to the same section.

Mrs. G. LANE, Highfield, Englefield Green, showed incurved Chrysanthemum, Geo. Lane, a massive bloom (three on the plant) of a pale violet tint.

Messrs. J. VEITCH & SONS, Ltd., Royal Exotic Nursery, King's Road, Chelsea, exhibited Wallflower Parisian Early, a brownish-yellow flowered variety with densely flowered, short, compact spikes; the flowers as large as a florin. The exhibitors received an Award of Merit for the strain. From the same nursery came Aster grandiflorus (Vote of Thanks).

Messrs. W. BALCHIN & SONS, Hassocks Nurseries, Sussex, showed Diplazis glutinosus Jubilee, a bright orange coloured flower, and D. g. rubra, one of a deep orange colour.

Mr. GODFREY, Exmouth, Devon, showed Japanese Chrysanthemum Beauty of Adelaide, a pale lilac variety; also Japanese incurved Mrs. Chas. Keyser, a beautiful bright yellow, of fine form; Japanese Mrs. M. Grant, orange-coloured, with twisted narrow florets; Japanese Mrs. George Gover, reddish lilac, confused, broadish reflexed florets; Japanese Admiral Itto, bright yellow, and stiff, voluted, narrow florets (this got an Award of Merit); Japanese Lady Northcote, white in the centre, florets which acquire a lilac tinge with age; it has much-reflexed narrow florets, of great length. Japanese Wilfred F. Godfrey is a flower that is orange-coloured in the centre, with buff outer florets, incurved, yet with an open centre.

Mr. C. CADDELL, gr., Camfield, Herts, showed Chrysanthemum Lady Ellen Clark, a pyramidal flower, with narrow, open used florets, white.

Chrysanthemums were also shown by Mr. T. GEE, Mr. C. F. THOMPSON, and Mr. OWEN, of Castle Hill Nursery, Maidenhead.

Flowers of Cyrtanthera chrysostephana were exhibited by F. W. MOORE, Esq., Royal Botanic Garden, Glasnevin; the flowers are tubular, of orange and red colour, growing terminally on the shoots—a useful plant at this season of the year.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), Dr B. Crawshaw, H. J. Chapman, S. Courtault, W. Thompson, J. Jacques, C. Winn, Major Mason, F. J. Thorne, T. W. Bond, W. H. Young, and G. Shorland-Ball.

The Right Hon. Joseph Chamberlain, Highbury, Moor Green, Birmingham (gr., Mr. Smith), sent six grand examples of Cattleyas and Laelia-Cattleyas, prominent among which were Cattleya Folia (labiata ♀, Dowiana aurea ♂). The original was raised by Messrs. James Veitch & Sons, and shown in 1894. The plant now shown had large flowers, the sepals and petals of which were light rose, with a

slight trace of yellow; lip broad, and of rich dark purple colour, with some distinct orange lines at the base (First class Certificate); Cattleya Miss Endicott (maxima × Loddigesii), with very pretty flowers, somewhat resembling those of C. maxima, but of firmer texture. Flowers bright, light rose; lip white, with a tinge of rose, and with distinct purple veining in the centre; Laelia-Cattleya Semiramis (Parrini × Gaskelliana), L.-C. Sallieri (L. purpurata × C. Loddigesii), Cattleya × Massiliensis (Transtr × aurea?), and a very large and finely-coloured Cattleya labiata. The group secured a Silver Banksian Medal.

A Silver Banksian Medal was also awarded to G. SHORLAND-BALL, Esq., Ashford, Wiltshire, Cheshire (gr., Mr. Alex. Hay) for a neat group of excellently grown Orchids, among which were two fine plants of the famous Cypripedium insigne Sanderi, the larger, which seemed to be rather broader and more yellow than the original, though the difference was infinitesimal and such as might occur very readily on growths from the same plant, having six fine flowers (Cultural Commendation). Another fine plant was Cypripedium × Lecanum magnificum, resembling the best form of C. × Lecanum giganteum, but with darker-coloured flowers and shorter flower-stalks (Award of Merit). Mr. BULL also showed a nice plant of the white Dendrobium Phalenopsis album, a good example of Lycaste macrobulba (Maxillaria macrobulba of Botanical Magazine, t. 1228) also known in gardens as L. Youngi; a splendid form of Cypripedium Alfred Hollington, the yellow C. insigne Bullii, and the massive C. i. Harfield Hall variety; C. × Memoria Moensii, C. × Niobe, two fine plants of Masdevallia Veitchiana, &c.

Messrs. JAS. VEITCH & SONS, LTD., Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for a group of rare hybrids, among which were Laelia-Cattleya Daphne (L.-C. × Schilleriana (L. elegans alba) ♂, C. Mossii ♀), with flowers equal in size to small C. Mossii; sepals and petals bluish-white, the latter bearing within the margin a pretty veining of purple colour; lip white, with chrome-yellow disc, and purple front; Cypripedium Actem (Lecanum ♀, insigne Sanderi ♂), resembling C. × Lecanum, but of a yellow tint; L.-C. Pallas, L.-C. Lady Rothschild, L.-C. Decia, L.-C. Statteriana, L.-C. Novelty, Cattleya Eurydice (Aeklandia × labiata ♀), C. Portia (Bourgingiana × labiata ♂), Cypripedium Niobe, C. Euryades, C. Tityus, &c.

Messrs. F. SANDER & CO., St. Albans, secured a Silver Banksian Medal for a bright group of varieties of Cattleya labiata, with which were Cypripedium insigne Sanderi, Lycaste Skinneri, the pretty Calanthe × bella, Laelia-Cattleya Broomfieldensis, Laelia autumnalis delicata, Miltonia veillaria Leopoldi, Cattleya aurea, and a finely flowered pan of Sophronitis grandiflora.

Messrs. W. L. LEWIS & CO., Southgate, showed a group of fifty of their fine importation of Laelia pumila, the best of which were L. p. conspicua, L. p. albo-marginata, L. p. grandiflora, and L. p. magnifica. The finest plant in the group was Cattleya labiata Lewisii, with sepals and petals pure white, the front of the lip being soft violet-purple, margined with white (Award of Merit). Also in the group were good Odontoglossum Rossi majus, Momodes pardunum, and its yellow variety, citrinum (unicolor).

Messrs. HUGH LOW & CO., Clapton, staged a group of Vanda corulea, &c., with which were the fine white Calanthe × Veitchii alba (First-class Certificate); the pure white Cypripedium bellatulum album, C. × Lecanum, C. × Niobe, &c.

W. VANNER, Esq., Camden Wood, Chislehurst (gr., Mr. W. H. Robbins), showed a stand of cut Orchids, including Cypripedium insigne Sanderianum, C. Stonii, C. × lo, C. Charlesworthii, C. × Niobe, C. × Harrisianum superbum, C. × Pitcherianum, C. × Schroderae, &c.; also plants of the fine spotted Odontoglossum crispum Dormanianum, Cypripedium × Egermannianum superbum, and C. × Vanneri (superbians × sellig-rum rubrum).

J. T. BENNETT-POE, Esq., Holmewood, Chesham (gr., Mr. Downes), showed Cypripedium × Phoenix, of unknown parentage, with flower somewhat resembling C. × Chas. Canham; also Vanda Sanderiana, Holmewood variety, with flowers nearly circular in form, the segments also being round and good in colour.

C. L. N. INGRAM, Esq., Elstead House, Godalming (gr., Mr. T. W. Bond), showed Cattleya × Comfrey (Lawrencea × Warscewiczii), a neat, light-coloured flower.

HENRY TATE, Esq., Allerton Beaches, Liverpool, sent Cypripedium Allertonense (villosum × bellatulum) and C. insigne bisepalum, a very singular and constant form in which the lower sepals are larger than the upper, and similarly tipped with white.

Mrs. S. WOOD, Moorfield, Glossop, showed Cypripedium × Alcides var. (insigne Maulei × hirsutissimum).

Fruit and Vegetable Committee.

Present: Phillip Crowley, Esq., in the chair; and Messrs. G. Bunyard, G. W. Cummins, A. H. Pearson, A. Dent, W. Iggliden, C. Herrin, F. Q. Lane, J. Smith, Rob. Fyfe, G. Norman, J. Wright, J. Willard, J. Cheal, and J. H. Veitch.

The Apple and Pear flavour competition brought twenty dishes of these fruits of a meritorious description, not a blemished example being remarked among them. The 1st prize for Apples was secured by Mr. TUNTON, gr., Maiden Erlegh, Reading, with Cox's Orange Pippin, fine fruits, above medium size; the 2nd prize was awarded Mr. G. WOODWARD, gr., Barham Court, Maidstone, for Ribston Pippin, the fruit also above average size, and with a very fine appearance.

Messrs. HARTLAND & SON, The Lough Nurseries, Cork,

showed Moreton Pippin, a crimson-skinned fruit of conical form and large size. Several dishes of Ribston and Cox's Orange were shown, also of King of the Pippins, King Henry, Cockle, Fearn, &c., by other persons.

Mr. WOODWARD, of Barham Court Gardens, was 1st for Pears, with Doyenné du Comice; and the Rev. H. GOLDING PALMER, Reading, was 2nd with Glout Moreau, small examples, with unblemished skin. Other varieties shown were Marie Louise, Zepherine Gregoire, Winter Nolis, Emile d'Heyst, Brown Beurré, &c.

From the garden of the Duke of Rutland, Belvoir Castle (gr., Mr. W. H. Divers), came a small collection of Pears (thirty-two dishes), of apparently excellent quality. We remarked of Pears, samples of Beurré du Buisson, Doyenné du Comice, Beurré Jean Van Geert, very high in colour, like Flemish Beauty; Beurré Rance, Marie Louise, Hayshe's Prince Consort, Madame Millet, Easter Beurré, Olivier de Serres, Doyenné d'Alençon, and Beurré Diel (Silver Banksian Medal).

Mr. W. IGGULDEN, Frome, Somersetshire, showed four basketsful of Gros Colman Grapes, 48 lb. in all. The fruit was extremely fine in every point and was awarded a Silver Banksian Medal. It exhibited a good way of showing Grapes in competition or for display in the shops.

Mr. O. THOMAS, of the Royal Gardens, Frogmore, sent a box filled with twenty fine symmetrical fruits of Frogmore All the Year Round Cucumber. The fruits were in all cases 20 inches long, slightly ribbed, short-necked, and without spines. It is a variety that develops fully in the dull season, and was stated to be a cross between Rochford's Market and Dickson's All the Year Round.

Mr. G. WYTHES, Sion House, showed Wythes' St. Martin's Cabbage, a firm-hearted variety.

Messrs. HARRISON & SONS, Market Place, Leicester, showed a very large collection of varieties of Beetroot, and were awarded a Bronze Banksian Medal. It seemed to comprise all the best known varieties of garden Beet.

SOUTHAMPTON CHRYSANTHEMUM.

NOVEMBER 2.—The Victoria Hall was again the site chosen for holding the exhibition of Chrysanthemum.

Groups of Chrysanthemum plants were a distinct feature, so well were they represented. The 1st prize was taken by Mr. C. HOSEY, gr. to J. C. E. D'ESTERRE, Esq., Elmfield Hill, Southampton, with plants less than 3 feet high, thoroughly well clothed with foliage, and carrying fully developed blooms of leading Japanese varieties.

Mr. H. G. HOLLOWAY, gr. to A. BROWN, Esq., Hill Farm Dairy, Southampton, staged the best specimen Chrysanthemum plants, averaging fully 3 feet in diameter, and carrying good blooms.

Cut blooms were thoroughly well shown. In the class for eighteen Japanese distinct there were no fewer than nine competitors. To Messrs. ELCOMBE & SON, Romsey, was adjudged the premier position for excellent examples of leading varieties. Mr. G. NOBBS, gr. to Her Majesty THE QUEEN, Osborne, I.W., was 2nd with a moderately good exhibit.

From Mr. F. G. FOSTER, Brockhampton Nursery, Havant, came the best incurved blooms in the principal class for eighteen varieties; and Mr. J. AGATE, The Nurseries, Havant, was 2nd.

Messrs. ELCOMBE & SON were again successful in the class for twelve Japanese.

Mr. WOODFINE, gr. to Major BOYD, Emsworth, was 1st for twelve incurved varieties.

Vivian Morel was adjudged the premier bloom in the Japanese section, and was staged by Mr. H. M. MONSE, Belmont Nursery, Sholing.

Mr. H. H. LEES was the most successful competitor in the amateur classes.

FRUIT was a feature of the show; excellent were the Grapes staged by Mr. MITCHELL, gr. to J. W. FLEMING, Esq., Chilworth, Romsey.

Mr. G. GOODWIN, Canterbury, contributed the premier Apples in each of the classes set apart for this fruit.

Mr. N. MOLYNEUX, gr. to J. C. GARNIER, Esq., Rookesbury Park, Wickham, Fareham, staged seedling Chrysanthemums of his own raising, to each was awarded a First class Certificate, viz.:—Mary Molyneux, Japanese, a full sized broad petalled, loosely incurving variety of a soft pink colour. Japa ese, Princess Charles of Denmark, bronze-yellow; and to Mrs. N. Molyneux, an immense ivory-white incurved variety.

HEREFORDSHIRE FRUIT AND CHRYSANTHEMUM.

NOVEMBER 2, 3.—This Society held its annual exhibition in the Shire Hall on the above dates. The display of Apples and Pears was, as usual, a very conspicuous feature, and that of Grapes and collections of fruits and vegetables was likewise a very good one; and although competition in the classes devoted to Chrysanthemums was in some cases less keen than usual, the excellence of the flowers was noteworthy.

FRUIT.

Apples, fifty dishes, distinct.—In this class, Mr. BASHAM, Fair Oak Nurseries, Newport, was deservedly placed 1st, with fruits of high quality, and had among his best dishes Mère de Ménage, Bramley's Seedling, Lord Derby, Sandringham, Bismarck, Newton Wonder, Lana's Prince Albert, King of the Pippins, Cox's Orange, and Adams' Pearmain; 2nd, Mr. PITT, Abergavenny.

Apples, thirty dishes distinct.—Here C. LEE CAMPBELL, Esq. (gr., Mr. Bayford), took the lead, with a fine collection, his best being Tyler's Kernel, Gloria Mundi, Winter Nonsuch, Bismarck, Warner's King, Peasgood's Nonsuch, Ribston and King of the Pippins, and American Mother; 2nd, Messrs. PEWTERESS BROTHERS, Pillington.

Pears, twenty-four dishes, distinct.—In this class, Mr. WATKINS, Pomona Farm, Hereford, was 1st, with a fine lot of fruit, his best dishes being Pitmaston Duchess, Beurré Balthé, Doyenné Boussoch, Napoleon, Beurré Diel, and Doyenné du Comice; 2nd, Mr. PITT.

Pears, twelve dishes, distinct.—1st, Lady EMILY FOLEY, Stoke Elith, Hereford (gr., Mr. Ward), having fine fruits of Easter Beurré, Pitmaston Duchess, Doyenné du Comice, Marie Louise, &c.

Apples, twenty-four dishes, twelve culinary and twelve dessert (open only to amateurs in Herefordshire).—1st, Sir J. PULLEY, Lower Eaton (gr., Mr. Williams), with good dishes of Tyler's Kernel, Alexander, Worcester Pearmain, Cox's Orange, King of the Pippins, Blenheim Orange, &c.; 2nd Mr. BLASHILL, Bridge Sollars.

Amongst non-competitive exhibits, Messrs. CRANSTON & CO., King's Acre, Hereford, had seventy dishes of Apples of considerable merit, those noted being Stirling Castle, Beaumann's Red Reinette, King of the Pippins, Grenadier, Schoolmaster, and Golden Noble.

CHRYSANTHEMUMS.

Group of plants 12 feet by 7 feet.—The 1st prize in this class was a Silver Cup, which was won by Mr. Williams, gr. to Sir J. PULLEY, Lower Eaton, with a brightly coloured and nicely arranged group; he was closely followed, however, by Mr. GRINDROD, gr. to P. S. PHILLIPS, Esq., Whitfield; 3rd, Messrs. PEWTERESS BROTHERS.

Cut Blooms.—Thirty-six blooms, twenty-four Japanese, twelve incurved (open).—1st, J. C. HANBURY, Esq., Puntypool Park (gr., Mr. Lockyer), with grand blooms of Amiral Avellan, Chas. Davis, C. Shrimpton, Mutual Friend, Edwin Molyneux, Commandant Blusset, &c. There was only one exhibitor in this class.

Twelve blooms, Japanese (open).—1st, A. S. WRIGHT, Esq., Linton (gr., W. H. Davis), with good flowers of Australian Gold, Commandant Blusset, Aldrick Linden, C. Davies, &c.; 2nd, R. C. B. CAVE, Esq., Colwell (gr., Mr. C. Smith).

Twelve blooms, incurved (open).—1st, J. C. HANBURY, Esq. (gr., Mr. Lockyer), with a finely finished lot, those noted being Charles Curtis, Madame Darier, and Brookleigh Gem; 2nd, A. G. WRIGHT, Esq.

A Gold Medal was offered for eighteen blooms, and was won by Mr. LOCKYER with a good even lot.

In classes open to Herefordshire only, Mr. GRINDROD and Mr. BAYFORD were prominent prize-winners.

WATFORD CHRYSANTHEMUM.

NOVEMBER 2, 3.—The Watford Chrysanthemum Society held their twelfth annual show on the above date, in the Clarendon Hall, Watford. The exhibition was most successful, the entries outnumbering those of last year, whilst the high standard of the exhibits was fully maintained. The groups were well varied in treatment, and the cut blooms were choice, and the exhibits of fruit and vegetables were slightly above the average of former years.

In Division I, open, the prizes for the best miscellaneous groups, and groups of Chrysanthemums, went to Lord ALDENHAM, gr., Mr. Beckett, and Mr. W. K. D'ARCY, the latter exhibitor being the winner of the Silver Cup offered for the best group. For cut blooms the main awards fell to Lord ALDENHAM's gardener, the Rev. H. BURCHELL HERNE, Mr. V. M. MARTIN, Hon. A. HOLLAND HIBBERT, and Mr. T. F. BLACKWELL. In the open classes for bouquets, wreaths, and crosses, the choicely arranged exhibits of Messrs. SCRIVENER & CO. again easily carried off all the 1st prizes, Mr. KETTLE taking three 2nds.

The special prize for the best incurved bloom in the show was carried off by Lord ALDENHAM for a fine large "Charles Curtis," whilst his lordship's "Oceania" captured the special for the best Japanese bloom shown.

Some splendid clusters of Grapes in the miscellaneous class secured premier honours for Mr. W. K. D'ARCY and Hon. A. HOLLAND HIBBERT; similar awards for vegetables and Mushrooms going to Lord ALDENHAM and J. C. JOURDAIN, G.C.M.G., respectively.

In the member's classes, keen competition ruled in the cut bloom classes, and it must suffice if we name the chief prizewinners. These were Mr. T. P. BLACKWELL, Mr. SKILBECK, Mr. A. C. ROWLANDS, and Mrs. PART; whilst the chief winners in the group-classes were Viscount ESKER, Mr. JOURDAIN, Mr. MARTIN, and Mr. H. S. SKERRY. Prizes for table-plants, Primulas and Cyclamens, were gained by Mr. S. T. HOLLAND, Lord ALDENHAM, Mrs. PART, and Mr. BLATHWAYS; and the winners in the fruit and vegetable classes were T. F. HALSEY, M.P., Lord ALDENHAM, Mr. W. F. D. SCHREIBER, Rev. H. F. H. BURCHELL HERNE, Mr. R. HENTY, Mr. KESTISH, Mrs. HUMBERT, and W. JUDGE.

The cottagers' exhibits were numerous and very well arranged.

The division for ladies only included awards for table decorations, which were taken by Miss MEAD and Miss M. D. SMITH, with some tastefully arranged flowers; whilst the same ladies took honours for a single stand of cut flowers. Miss BELGROVE obtained two 1sts for six buttonhole-bouquets (gents), and three buttonholes (ladies); whilst Miss SMITH won the 2nds.

ISLE OF WIGHT.

NOVEMBER 2, 3.—A successful show of Chrysanthemums was held at RYDE on the above dates. On this occasion a successful exhibitor, Mr. T. W. BUTLER, gr. to S. BIRD, Esq., Slatwoods, East Cowes, won the Challenge Cup for the second time, it becoming therefore his property.

The Isle of Wight Chrysanthemum Society held their thirteenth annual exhibition at NEWPORT on Thursday and Friday 4th and 5th inst.

The exhibits were less numerous than last year, but no falling off was observed in their quality. Specimen plants formed a special feature of the show; a plant by Mr. W. SCOTT of Soar Dorothée Seville, being 20 feet in circumference, and possessing upwards of 200 blooms. Mr. J. J. LIMINGTON had a huge plant of W. Tricker, and Mr. E. W. SHEPARD, a magnificent plant of E. S. Trafford.

The SHANKLIN Chrysanthemum Society held its show on Thursday and Friday, November 4 and 5. Here it was noticeable that exhibits were more numerous and of better quality than last year.

Mr. H. LOVE secured the Isle of Wight Horticultural Improvement Association Certificate for Cultural Merit; whilst Mr. M. SILSBURY received the association's Award of Merit for seedling Chrysanthemum blooms of Nina Dabbs.

The monthly meeting of the ISLE OF WIGHT HORTICULTURAL IMPROVEMENT ASSOCIATION was held on Saturday, 6th inst., at Newport. Dr. J. GROVES, B.A., J.P., presiding over a large attendance of members; and Mr. J. Barkham gave a discourse on the cultivation of Chrysanthemums by amateurs, dealing lucidly with every stage in the cultivation of the plants. A profitable discussion arose on the Wood Leopard Moth Caterpillar, a member having sent a specimen with the chips worked out of the burrow or tunnel; and on the worm-eating slug Testacella balitoides, a member having observed the habits of this gardener's friend. Several new members were elected.

WOLVERHAMPTON CHRYSANTHEMUM.

NOVEMBER 3.—This exhibition was opened at the Drill Hall, Wolverhampton, on the above date, by the Mayoress of Wolverhampton, a large company being present. The quantity was large, and the quality of the exhibits excellent on this occasion; the Japanese section claiming deservedly the greater amount of attention from the visitors, while fruits and vegetables were numerous and of good quality for the time of year. In the competitive classes, the competition was keen; and among exhibitors of Japanese varieties especially, many fine blooms in fresh condition being exhibited in almost every stand.

Mr. C. T. MANDER, The Mount (gr., Mr. G. F. Simpson), was 1st for a group of Chrysanthemums, in which very fine blooms of Madame Carnot, Sunflower, Edwin Molyneux, Commandant Blusset, J. Agate, C. Curtis, were remarked. The 2nd prize fell to W. F. BAKER, Esq., Avenue House, Tettenhall (gr., S. Whitehouse).

Another kind of group consisted of Chrysanthemum, plants and foliage-plants intermingled, and here Miss PUNT, The Wergs, Wolverhampton (gr., G. Bradely), was the winner, the flowers being pleasingly set off by Eulalia, Bamboos, well-coloured Crotons, &c.; Mr. SANDER, The Terrace, Oaken (gr., G. Minton), was 2nd.

The Earl of HARRINGTON (gr., Mr. Goodacre), was 1st in the twenty-four incurved bloom class, showing extra good flowers of Mrs. R. King, Madame Darier, Lord Alcester, C. H. Curtis, John Doughty, Queen of England, Empress of India, &c. Messrs. J. R. PEARSON & SONS, Chillwell Nurseries, Nottingham, being the 2nd.

In the competition for the best twenty-four Japanese, H. T. HAYHURST, Esq. (gr., W. Bremmell), was 1st; his blooms being Amiral Avellan, Edith Tabor, Commandant Blusset were fine; and Mr. G. PHILLIPS, Shrewsbury, was 2nd.

Among non-competitive exhibitors, W. HAYTON, Esq., Hill Grove, Kidderminster (gr., Mr. T. Pole), staged a number fine bunches of Gros Maroc, Gros Colman, and Muscat of Alexandria Grapes; Messrs. DOBBS & CO., Wolverhampton, ornamental shrubs and a collection of vegetables; Mr. R. LOWE, nurseryman, Wolverhampton, a group of Chrysanthemums, Palms, &c.; Messrs. JONES & SONS, Shrewsbury, bouquets of Cactus Dahlias, and stands of Pompon Dahlias arranged with autumn foliage; Mr. JAMES HUGHES, Tettenhall, of Ferns and Chrysanthemums.

In the class for six table plants, Earl SPENCER, Althorpe, Northampton (gr., Mr. S. Cole), was the most successful exhibitor.

A few Orchids were well shown by Alderman GEO. THOMPSON, Dudley, and F. SANDER, Esq., Oaken.

EALING HORTICULTURAL.

NOVEMBER 3.—The Victoria Hall was well filled on this occasion, handsome groups lining the side walls. The tables running the length of the hall were well filled with fruit and flowers of a high quality; while vegetables were a very meritorious feature, especially from the allotment holders.

The best of the large groups came from Mr. C. Edwards, gr. to H. PEAL, Esq., Ealing, who had well-grown plants and fine heads of bloom; Mr. John Hay, gr. to T. LILLY, Esq.,

A. WARBURTON, Esq., Vine House, Haslingden (Mr. T. Lofthouse, gr.), presented the hybrid Cattleya, The Czar, which resembles C. x Victoria Regina, but is much superior to it, in having very large flowers, with thick segments, and a large lip of good colour (First-class Certificate).

J. LEMANN, Esq., West Bank House, Heaton-Mersey (Mr. Edge, gr.), showed one of the best forms of Vanda coerulea, bearing 40 flowers, of much substance and general merit. It received a First-class Certificate.

The same grower had a fine variety of Cypripedium oeanthum superbum, a finely-grown plant of Cymbidium Traceyanum, which received a Cultural Commendation; and another one, the better of the two as regards condition, which received an Award of Merit. Other good things were presented by Mr. LEMANN.

THOS. STATTEN, Esq., Stand Hall (Mr. R. Johnson, gr.), had a very good lot, the best being a very large plant of Cypripedium Leeanum Albortii, which received an Award of Merit; and the same honour was given to the reverse cross of Cypripedium x Phoebe, a large flower.

O. O. WHOLEY, Esq., Bury (E. Rogers, gr.), showed a large lot of cross-bred Cypripediums, but none of them received a recognition.

E. J. SIDEBOTHAM, Esq. (Mr. Shiner, gr.), had an Award of Merit for a bright flowered Cattleya labiata.

GEORGE ROWE, Esq., Clarence Drive, Timperley, had a good healthy plant of the so-called Cattleya Hardyana, but there have been so many of this plant shown that this one was passed without honours.

An Award of Merit was voted to cut flowers of a good Cattleya Dowianii, but there was a good bit of grumbling over this, seeing that so many of the choicest gems of the Orchid-houses were passed by.

W. GERT, Esq., had Cattleya x Mantini and one or two other plants. Mr. JAMES ANDERSON had a fine, pale variety of Laelia grandis tenebrosa, and several Cattleyas. Mr. DUCKWORTH, of Shaw Hall, Flixton (Mr. H. Twedale, gr.), had a good plant of Cattleya x Masdevallia nobilior. H. WORTHINGTON, Esq., Abbey Lawn, Whalley Range, had the rare Catasetum splendens Worthingtonianum—the best of the family; it received an Award of Merit. Wm. THOMSON, Esq., the chairman, had a nice showy lot of miscellaneous Orchids, which received an unanimous Vote of Thanks. The committee do not sit again till the 25th of the month.

DEVON AND EXETER CHRYSA- THEMUM AND FRUIT.

NOVEMBER 4, 5.—While showing little evidence of advance, the 186th exhibition of the society was moderately satisfactory. The groups were hardly so fine as they have sometimes been, and those classes lacked competition, there being a prize for each entry in the leading classes. In the cut blooms and in the fruit classes the contest was, in many instances, fairly keen.

Groups.—For a group of Chrysanthemums in pots, not fewer than eighteen varieties, arranged in a circle of 10 feet diameter, the 1st prize went to Mr. W. BROOK, Parkerswell (gr., W. Rowland); and a close 2nd to Mr. W. PRIMO, St. David's Hill (gr., H. Stocker). Mr. BOWLAND's group winning through superior finish and arrangement, rather than for quality of bloom. For the first appearance in the show hall, Mr. STOCKER's exhibit was more than creditable.

In a smaller group, another new Chrysanthemum exhibitor came to the front in Lady DUCKWORTH, Knightleys (gr., W. R. Baker).

A 1st prize for a miscellaneous collection of plants, including Chrysanthemums, went to Mr. BROCK, who was an easy 1st.

Cut Blooms.—The Silver Cup for the best collection of thirty-six Japanese, distinct, was keenly contested for, the judges eventually awarding it to Mr. H. HAMMOND SPENCER, Teignmouth (gr., G. Foster); and the 2nd prize to Mr. V. STUCKEY, Langport (gr., Mr. Lloyd). Mr. Foster's blooms showed greater depth and body, but Mr. Lloyd's were fresher, and ran the 1st collection very close indeed. To the winning board was awarded the National Chrysanthemum Society's Certificate. Among the best blooms were Australia, Mr. G. W. Palmer, Viscount Hambleton, Mutual Friend, Mr. H. Payne, and Mons. C. de Leche.

In the class for eighteen Japanese blooms, Mr. HAMMOND SPENCER and Mr. STUCKEY were again 1st and 2nd respectively.

In the six white Japanese, one variety, the Rev. H. HUTCHINS, Teignmouth (gr., F. Hill), was 1st, with M. Carnot.

The 1st prize for the best six blooms of a yellow Japanese went to Mr. H. SPENCER, for very fine blooms of Phoebe.

Single-flowered varieties were few in number, but good, Mr. M. FABRANT winning with a fresh and meritorious lot.

In the Anemone flowered, Mr. W. MACADAM SMITH, Wivelacombe (gr., C. Cooper), was 1st, his Owen's Perfection being very good.

Incurved varieties were not shown numerously or remarkably well.

Fruit.—Grapes were much better than usual, and the classes were well contested. The 1st prize for three bunches any other kind than Black Alicante and Muscat of Alexandria, went to Mr. F. M. CANN (gr., W. Kingdon), who staged excellent bunches of Lady Downes' Seedling.

The 1st prize for three bunches of any variety brought out the old Trebbiano Grape in good form. Mr. V. STUCKEY was 1st.

The premier prize for Black Alicante was won by Mr. G. W. MATTHEW, Exmouth, an amateur who showed very fine fruit.

In Muscat of Alexandria, the Rev. A. H. HAMILTON GELL (gr., Mr. Barnes), was 1st.

In the premier class for Apples in thirty varieties, Sir THOS. D. AGLAND, Bart., was 1st, with a splendid collection.

In the twelve varieties class, Sir DUDLEY DUCKWORTH KING, Bart. (gr., J. McCormack), won premier honours with an excellent lot.

The first for flavour went, as usual, to Cox's Orange Pippin, which was shown by Mr. F. HEARN, Aliphington (gr., F. Anning), the same exhibitor staging one of the finest dishes of Cornish Gilliflower ever seen at this or any other show.

Pears were not good or numerous. The honours in dessert Pears for flavour went, of course, to Doyenné du Comice, which was particularly well shown in several instances.

Trade exhibits included collections from ROBERT VIGNON & SON, Exeter; W. J. GODFREY, Exmouth; W. B. SMALL, Torquay; THE EXETER NURSERY CO., JARMAN & CO., Chard; RUSH & CO., Exeter; C. G. SLATER, Heavitree; BUNYARD & CO., Maldstone; FOOTE & CO., Sherborne.

LEYTON AND DISTRICT CHRYSA- NTHEMUM.

NOVEMBER 4, 5.—This was the first exhibition of a new society whose sphere of operations extends over south Essex; and it must be admitted they started remarkably well, the spacious Town Hall being filled to overflowing with exhibits generally of a high order of merit. The veteran Mr. D. DONALD being the chairman of the committee, refrained from exhibiting; but he placed a group on the platform, flanked on either side by one of his superb specimen plants.

Groups arranged for effect were wonderfully good in that class open to all. Mr. J. SPINK, nurseryman, Walthamstow, staged superbly-grown and flowered specimens on single stems; Mr. C. Bartlett, gr. to Mrs. JONES, Walthamstow, was 2nd. In the class for a group arranged for effect, with foliage, Mr. SPINK was again 1st; and Mr. W. CADZ, Wandstead, 2nd.

In the amateur's division for a group, Mr. W. CASSIDY, Walthamstow, was 1st; and Mr. E. J. PETER, Walthamstow, 2nd.

The three best dwarf-trained specimens were from Mr. G. Whitehouse, gr. to S. NICHOLS, Esq., Whipps Cross, who was also 1st with three standard-trained specimens, finely grown and flowered, the varieties being W. Seward, W. Trioker, and John Shimpson.

Mr. SPINK had the best four bush-trained specimens, all Japanese, admirably grown and flowered; Mr. WHITEHOUSE, a good 2nd.

Cut blooms were remarkably good, especially the twenty-four from Mr. R. Kenyon, gr. to F. HILLS, Esq., Monk-hams, which were very fine throughout in such new varieties as Mrs. C. Bick, Mutual Friend, Phoebe, Lady Hanham, Edith Tabor, Lady Byron, and Australian Gold. A grand bloom of Mons. Pankoucke was very striking. Mr. R. H. BROWN, Walthamstow, had the best twelve varieties, and Mr. W. H. LOCKER the best six of one variety.

Mr. W. J. SIMMONS, Wandstead, had the best twelve incurved, chief among them R. Cannell, Princess of Wales, Major Bonnafton, Mrs. Jas. Murray, C. H. Curtis, &c.; Mr. J. MALLETT was 2nd. Mr. SIMMONS had the best six varieties.

Several classes were set apart for amateurs, Messrs. W. CASSIDY and T. SMITH being the leading winners of prizes in the cut blooms; and there were several classes for table decorations, in which ladies competed. In the open class for a dinner table Mr. L. H. CALCUTT, Stoke Newington, was awarded the 1st prize.

ASCOT AND DISTRICT CHRYSA- NTHEMUM.

NOVEMBER 4, 5.—The above Society held its Chrysanthemum, Fruit and Vegetable Show in the Grand Stand. The open class for twenty-four distinct Japanese blooms brought ten competitors, and there were nine collections staged in the class for twenty-four incurved distinct groups of Chrysanthemums, which were never better. The 1st prize exhibit of Mr. Lane, gr. to Miss DURING SMITH, King's Ride, Ascot, was composed of very dwarf, well-foliated plants, carrying heavy blooms. Messrs. J. LAING & SON, Forest Hill, sent about fifty dishes of superb Apples and Pears. Messrs. ISAAC HOUSE & SONS, Coombe Nurseries, Westbury-on-Trym, Bristol, had a good group of Violets, Princess of Wales, California, &c.

Cut-flowers (Open), twenty-four Japanese, distinct.—T. B. KEYWOOD, Esq. (gr., Mr. C. J. Salter), Woodhatch, Reigate, was a good lot with solid, fresh-coloured blooms; Sir GEORGE RUSSELL, Bart., M.P. (gr., F. Cole), Swallowfield Park, Reading, was a good 2nd.

For twenty-four incurved blooms, distinct, F. W. FLIGHT, Esq., Twyford (gr., W. Neville), was 1st with clean, neat, but rather small and flat flowers; 2nd, T. B. KEYWOOD, Esq., with larger flowers, but less fresh.

For thirty-six blooms, eighteen incurved and eighteen Japanese distinct, confined to the society's district, only two competed, and the Silver Cup was easily won by Mr. W. Lane, gr. to Miss D. SMITH, King's Ride, Ascot. This is the third consecutive time Mr. Lane has taken this Cup, and it now becomes his property.

For twelve incurved blooms distinct, R. C. CHRISTIE, Esq.

(Mr. W. Wilson, gr.) was 1st with nice even blooms, but a close 2nd was Lady ISABELLE BRAVA (Mr. Fred Hereman, gr.), Rose Mount, Bunninghill.

The best twelve Japanese blooms distinct: Mr. W. WILSON was again 1st with grand flowers of Modestum, and Mons. Pankoucke.

There were distinct classes for miscellaneous plants, and for fruits and vegetables.

THE BARDFIELD OR TRUE OXLIPI.—In the last issued number of the *Journal of the Linnean Society*, Mr. MILLER CHRISTY has a valuable paper on the common Primrose, *P. acaulis*; the Cowslip, *P. veris*; and the true Oxlip, *P. elatior*. The common or hybrid Oxlip is a cross between the Cowslip and the Primrose. Mr. CHRISTY sketches the characteristic points of distinction and the geographical distribution of the several species, and especially of the true Oxlip, which is rigidly confined to the boulder-clay, or rather to a restricted portion of that formation. The common Primrose, *P. acaulis*, is absent from the Oxlip area, but the Cowslip, *P. veris*, is abundant in it. Hybrids occur between elatior and acaulis very commonly, especially along the line where the areas of distribution of each species meet. Hybrids between the Cowslip and the true Oxlip are rare.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending November 6.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since January 8, 1897.	Total Fall since Jan. 8, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 8, 1897.
		Above 45° for the Week.	Below 45° for the Week.	Above 45° difference from Mean since January 8, 1897.	Below 45° difference from Mean since January 8, 1897.					
0	1 +	32	10	+ 187	— 16	13	— 189	34.9	40	30
1	2 +	25	7	+ 14	— 4	7	— 170	24.2	17	32
2	3 +	36	0	+ 82	— 93	6	— 151	20.1	7	34
3	0 aver	29	6	+ 135	— 134	6	— 146	19.7	23	39
4	1 +	25	4	+ 70	— 135	6	— 144	22.5	30	36
5	1 +	36	0	+ 248	— 198	8	— 137	21.8	37	40
6	3 +	36	0	+ 94	— 40	12	— 181	35.6	27	38
7	2 +	39	0	+ 154	— 109	9	— 166	27.8	38	36
8	1 +	41	0	+ 254	— 148	10	— 172	34.6	31	39
9	4 +	46	0	+ 48	— 10	9	— 194	33.1	29	30
10	8 +	52	0	+ 184	— 76	9	— 183	36.5	42	34
*	2 +	69	0	+ 371	— 80	9	— 184	29.3	39	42

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, E. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

THE following summary record of the weather throughout the British Islands for the week ending November 6, is furnished from the Meteorological Office:—

"The weather during this period continued very dry generally, the only rain experienced having fallen at some of our south-western stations on October 31, and in the east and south-east of England on November 6. Local fogs and mists prevailed during the earlier part of the week, and a good deal of cloud and gloom later on.

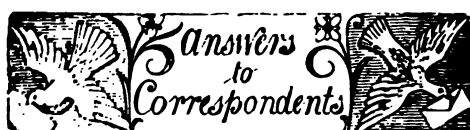
"The temperature was rather above the mean almost everywhere, but only just equalled it in 'England, E.' The highest of the maxima were registered during the earlier part of the week, when they varied from 63° in 'England, N.W.' to 62° in several other districts, to 58° in 'Scotland, W.'

Important to Advertisers.—The Publisher has the satisfaction of announcing that the circulation of the "*Gardeners' Chronicle*" has, since the reduction in the price of the paper, **MORE THAN DOUBLED,** and that it continues to increase weekly.

Advertisers are reminded that the "*Chronicle*" circulates among **COUNTRY GENTLEMEN, and ALL CLASSES OF GARDENERS and GARDEN-LOVERS at home, that it has a specially large FOREIGN and COLONIAL CIRCULATION, and that it is** *preserved for reference in all the principal Libraries.*

CHRYMALIS : The larva of the Stag-beetle.

CHRYSANTHEMUM : C. B. W. & Co. A species of rust like that attacking the leaves of the Rose. Another





THE Gardeners' Chronicle.

SATURDAY, NOVEMBER 20, 1897.

A STREATHAM GARDEN.

"THE Rookery" stands upon the brow of Streatham Common, and is the present residence of Lady Key. The house was built long before an ever-expanding London had encroached to Streatham Common, when, indeed, for most practical purposes, the locality had as little pretension to urban life as the New Forest possesses to-day. A water-supply, a railway-station, gas, and other modern necessities did not enter in those days into the everyday life of the Streatham Common district. It seems to be pretty clearly known that the building was erected by a smuggler, who used to convey his ill-gotten goods from the South Coast to cellars he had made below this residence, the transference, of course, being deputed to armed gangs of men. In those days the great North Wood was cropped with forest trees, but it has departed long since, and its only influence that can be observed to-day is in the fact that it succeeded in perpetuating its name in the district by which it was supplanted—Norwood. As one sees the number of omnibuses that arrive at Streatham Common every few minutes from the City, a good many of the historical associations of The Rookery that one learns from Mr. W. G. Turner, who has been gardener at the place for about forty-five years, appear incredible, and would be so had circumstances not afforded us similar experience in other districts that have fallen before the "forward" growth of the metropolis. The present Lady Key has resided here for fifty-six years, and it is of interest to speculate what will become of The Rookery when she ceases to need its tenancy? It may be re-let, and it may not, the probability is that bricks and mortar will invade the grounds; and it is whispered that even now such action has been determined upon.

Before the end comes, these few notes may be interesting, for it is a place where, years ago, gardening was practised successfully, if not extensively; and Mr. Turner has won many prizes for fruit in the old "Regent's Park days," about which the most venerable of present-day gardeners are always eloquent. On reference to fig. 105, p. 359, a partial view of the front of the house may be seen. It is beautifully covered with Magnolias, Myrtles, and Ampelopsis. At the end may be noticed a fine Cedar of Lebanon, not aged, but of excellent proportions. There are two other good specimens of the same species in front of the house, and a poor tree of Araucaria imbricata. Concerning this species, Mr. Turner says: "I bought it about thirty years ago from Mr. Jno. Waterer, and it was then 10 to 12 feet high. It grew splendidly, and every two or three years I removed a larger circle of the clay soil from around the roots,

and gave it a more agreeable compost. But at last it failed to grow, and a handsome specimen became a poor-looking cripple in a very short time."

From the terrace, shown in the photograph, it was once possible to obtain an unbroken view to Addington, but trees have been planted on neighbouring property, and they have grown high, until now the view from The Rookery is shut in disagreeably. But on a clear day you may see Epsom grand-stand—a poor compensation for Time's depreciating effect upon the place. The ground slopes steeply from the front of the house, where the lawn is kept very beautifully; and mark how "little" matters have been attended to in the beautifying of the terrace. Baskets and vases are filled with flowering plants, and Retinosporas, and even the skeleton lamp-posts have been utilised for planting Ivy-leaved Pelargoniums, which certainly help to screen the stiff, unpleasant-looking objects during the summer.

We next walk to the bottom of the lawn, and among some shrubs notice a pretty shelter—part of an arched walk 80 feet long, over which Roses are trained. The shelter is supported by eight iron pillars, each covered with a small-leaved Ivy, and the roof with a Banksian Rose. The old ice-well, 35 feet in the ground, has not been used since the common has been frequented by Londoners, and the ice is required by them for skating upon. There is a little house with a number of fine old Camellias in it. The walls are clothed by them, and a centre bed is filled by them. All of these have been planted about thirty years, and each of them cost a £10-note, most of them having come from Messrs. Lee's old nursery at Hammersmith. Some carpet-bedding is noticed, a fine lot of border Carnations, Sweet-Briar hedges looking very bright with numerous haws, and an old-fashioned kitchen garden, that suggests in its Peach and Apricot walls that it has nearly run its course. There is a good-sized Walnut-tree, and one is reminded of what can be done in a period of forty years, when Mr. Turner assures us that he once had the same specimen in a 6-inch pot.

In the kitchen garden is a locked-up place that looks not unlike a fruit or store-room, but upon entering it, one finds it is a covered bath in a mineral well, where the late Jas. Coater, Esq., then owner of the property, used to have daily dips. (This Mr. Coater was one of the exhibitors of plants in the days when the late Dr. Lindley was at Chiswick.) The water in the locality contains considerable mineral matter, is aperient, and is even injurious to many plants. In front of the covered well is an old sun-dial, but its capacity for usefulness was ruined one night by a policeman who was "on patrol," for it is said he had no person to arrest, and consequently arrested the brass fittings.

The fruit-garden affords much interest in its present condition. One can easily see that it was well done "once," but for years the garden has stood still, except in the matters of tending and keeping. There have been few renewals. Some of the old espalier, bush, and pyramidal trees are the most quaint objects possible (see fig. 105, p. 359). Numbers of them, too, have been trained according to a system once common in the case of Pear-trees, when they looked like Weeping Willows, and stones were attached to the tips of the shoots to bring them into a drooping position. The espaliers have grown out of all bounds, and some of them are twisted and crooked very curiously, being considerably over a hundred years old. One of the bush specimen Apple-trees is shown by fig. 106, p. 361, and is probably the variety Yorkshire Greening. Said Mr. Turner, "Some of the younger of the fruit-trees I grafted or budded in Penge Wood about forty-two years ago. I worked them in the spring of one year, and the next, such as had taken were removed to the garden here. But, in spite of little planting during late years, there have been good crops of Apples even this year, and some varieties are exceedingly plentiful in a good season, Ribeton and Blenheim Orange Pippins particularly so." Mr. Turner is an intelligent gardener; and though circumstances do not warrant the planting of young fruit trees and such like, he does his best to obtain crops from the old ones, and is successful. R.H.P.

NEW OR NOTEWORTHY PLANTS.

CEROPEGIA WOODL.*

THIS is a very interesting and beautiful plant, discovered in Natal by our old correspondent, Mr. Medley Wood, and introduced by Mr. William Bull. It is a trailer with very slender branches, bearing cordate suborbicular fleshy leaves, variegated with silver markings on the upper surface, and producing in the axils of some of the leaves small, globose, fleshy tubers, emitting roots by which the plant can easily be propagated. The flowers are about 1 inch long, pinkish or violet, with a slender tube distended at the base, and expanding above into a five-lobed limb, the five lobes dark purple, and united at the tips, so as to resemble a crown arching over the mouth of the tube (fig. 104, p. 358).

It will form an excellent basket plant in a warm-house, and is suitable for rockeries or other decorative purposes.

CHRYSANTHEMUM GOSSIP.

(Continued from p. 341.)

LEIGHTON HOUSE.—During the several years in which Mr. Mann has had charge of the gardens of Leighton House, Westbury, the residence of W. H. Laverton, Esq., Chrysanthemums have been made a specialty; and although exhibiting has for the past two or three seasons been discontinued, the show of blooms this year eclipses any preceding year. The gardener is one who appreciates the merits of older varieties, and produces splendid flowers from those which others discard in favour of novelties. Not that new varieties are absent from the collection, for they are there in strong evidence. It is pleasing to compare the old and the new standing side by side. For the conservatory or house decoration, plants with a few large flowers are much liked, and also for cutting. For prolonging the season of "Mums," early-flowering varieties are cultivated, and these produce fine specimens early in the month of October, the display continuing into December, by selecting the buds of the varieties of, mostly, the Japanese sections. At the time of my visit, the following varieties, the best in point of size, colour, and finish, were such as would be prominent in any open competition at provincial shows, viz., Lady Ridgway, Australie, and Eva Knowles, with enormous flowers; Duchess of Wellington, Pride of Exmouth, Ethel Addison, Edith Tabor, Mrs. C. H. Payne, M. Chenon de Leché, and Beauty of Teignmouth; Duke of Wellington, Phœbus, M. Hoste, Helen Owen, Australian Gold, Modestum, Graphic, Le Moucheronette, Souvenir de Petite Ami, Vicomte Roger de Chazelles, Pride of Maidenhead, Oceana, Simplicity, Deuil de Jules Ferry, Miss Mary Godfrey, Belle Mauve, Indiana, Pallanza, General Roberts, Madame R. Houles, Amiral Avellan, Colonel W. Smith, Octoroon, Mutual Friend, Swanley White, Sunstone, and Mrs. W. J. Godfrey.

The incurved Chrysanthemums, not grown to the same extent as formerly, had some extra good blooms. The plants grown for the production of specimen blooms numbered several hundreds, including early mid-season, and late varieties, and all were in the best of health, and freely flowered. Much credit is due to Mr. Mann for the excellence of the Chrysanthemums, and his general good management of the gardens. Visitor.

* *Ceropegia Woodl.*, Schlechter, in *Engler. Bot. Jahrbücher*, vol. xviii.; *Beiblatt*, No. 45, p. 34 (1894). — *Glaberrima decumbens ramosa*; ramis filiformibus remote foliatis ad 50 cm. longis; foliis erectis gracilibus petiolatis cordato-ovatis acutis vel reniformi cuneatis breviter acuminatis carnosius 0.5–1.3 cm. longis, supra basin 0.5–2 cm. latis; petiolo 0.4–0.8 cm. longo; floribus singulis extra axillaribus alternantibus; pedicellis suberectis petiolorum longitudine; calycis segmentis linearibus lanceolatis acutis glabris intus imis basi utrinque glandula vel squamella parvula donatis 0.2 cm. longis; corolla urceolari 1.6 cm. long.; tubo basi inflato subglobozo 0.3 cm. diametro; deflexo subito contracto cylindrico 0.2 cm. diametena; lobis erectis ovato-lanceolatis obtusis ciliatis marginibus reflexis in columnam tubo a gustorum conniventibus; apice cobarantibus 0.4 cm. longis; corone phyllis exterioribus in cupulam brevem apice 5-lobam connatis; lobis ovalibus obtusis dorso sulcatis; foliolis interioribus exteriora multa excedentibus erectis linearibus lanceolatis apice acuto reflexis, basi angustatis; pollinibus oblique ovalibus obtusis paulo compressis caudiculis brevibus glandula oblonga obtusis basi insertis. In rupibus montis Grunberg, alt. 600 m. Feb., 1881. J. M. Wood, n. 1317.

THE BOTANICAL HISTORY OF THE UVA, PAMPAS GRASS AND THEIR ALLIES.

THE genus *Gynerium* is best known by the two species *G. argenteum*, Nees, the "Pampas-grass" of our gardens and parks; and *G. saccharoides*, Humb. and Bonpl., the "Uva," the panicles of which, along with those of the first-named species, are sold for decorative purposes. *G. argenteum* is perfectly hardy in our climate, whilst *G. saccharoides* is a hot-house plant which is very seldom cultivated, and is only known to most people from its beautiful plumes, which are imported from America. This latter species, the *Gynerium saccharoides* of Humboldt and Bonpland, is the original species of the genus. The authors discovered it near Cumana, in Venezuela, and they described and figured it in their *Plantæ Equinoctiales*, ii., 112, t. 115 (1809). It was, however, already known to G. Marcgraf, a German doctor, who travelled more than 250 years ago in North-eastern Brazil between Pernambuco and Rio Grande do Nord. He described it, very accurately for his time, in his *Historia rerum Naturalium Brasiliæ*, p. 4 (1648), as *Arundo sagittaria*, the name referring to the use of the tops of the stems for arrow-shafts. Aublet, who explored French Guiana from 1762 to 1764, knew also the grass, and he called it *Saccharum sagittatum* (*Plantes de la Guiane*, i., 50; 1775). The affinity with *Arundo* as well as with *Saccharum* was suggested by a certain superficial resemblance with the common Spanish cane, or with the Sugar-cane. Humboldt and Bonpland were the first to point out the true structure of the spikelets, and the dioecism and the sexual dimorphism of the grass—characters which have since been recognised as constituting the "differentia generica" of *Gynerium* and *Arundo*. The consequence was that all the species which would otherwise have been referred to *Arundo*, but which were found to be dioecious, and more or less dimorphic, were included in *Gynerium*. Nees applied this principle first to a species which was till then known as *Arundo dioeca*, Spreng.; or *A. Selloana*, Schult.; and it became now *Gynerium argenteum*, Nees, our well-known "Pampas grass." He described also several new species of *Gynerium*, some of which were, however, reduced by him in a later publication. Steudel, Philippi, Doell, &c., added several more, so that the authors of the *Kew Index* have enumerated fourteen specific names under *Gynerium*. Adding four other names which they omitted,* and two further species which have been described since 1885; they are in chronological order as follows:—

- 1809 : *saccharoides*, Humb. and Bonpl., l. c.
 1812 : *sagittatum* and *procerum*, Beauv., *Agrost.*, 138 and 164 respectively.
 1820 : *argenteum* and *parviflorum*, Nees, *Agrost. Bras.*, 462, 463.
 1834 : *Neesii*, *pygmaeum*, Nees, and *speciosum*, Nees (name only), in *Meyen Reise u. d. Erde*, i., 380, 407, 484.
 1843 : *Quila* and *speciosum* (described) Nees, in *Nov. Act. Not. Cur.*, xix., Suppl. 1., 153.
 1854 : *zealandicum*, Steud., *Syn. Gram.*, 198.
 1864 : *atacamense*, Phil., in *Linnæa*, xxxiii., 289.
 1866 : *purpureum*, Carr., in *Rev. Hort.*, xxxvii., 419.
 1873 : *dioicum*, Dallière, *Fl. Ornam.*, i., t. 42.
 1875 : *roseum* Rendatleri, *The Garden*, viii., 165.
 1876 : *Levyi*, Fourn., in *Ill. Hort.*, xxiii., 137.
 1878 : *modestum*, Doell, in *Mart. Fl. Bras.*, ii., ill., 270.
 1883 : *arcuato-nebulosum*, Carr., l. c., lvi., 200.
 1889 : *triaristatum* and *Wolffii*, Sodiro, in *Ann. Univ. Quito*.

Of these, the following may be dismissed at once:—1, *sagittatum* (= *G. saccharoides*), a mere resuscitation of Aublet's specific name (under *Arundo*); 2, *procerum*, which name appears in the index, probably by error; 3, *Neesii*; and 4, *pygmaeum*, as "nomina nuda," and as synonyms of *G. Quila*, according to the author himself; 5, *Levyi*, reduced by the author to *G. saccharoides* in his *Mexicanarum Plantarum Enumeratio*; 6, *dioicum*, which is *G.*

argenteum, re-christened after its oldest synonym, *Arundo dioeca*.

Before I enter, however, on the somewhat difficult question of the validity of the remaining fourteen species, I must point out that they represent two very

differences more conspicuous, I put the description of the essential characters of both grasses alongside in two parallel columns—

G. SACCHAROIDES.
 Growing gregariously in more or less extensive reed-beds.

Rhizome—creeping.
Innovation shoots—extravaginal, viz., piercing the subtending sheath at the base, and growing up outside, and more or less remote from it; hence, the shoots coming up singly from the ground.

Culms—perennial; 12 to 30 feet high, to 2½ to 3 inches thick at the base, solid, woody below; internodes 40 to 60 and more, sub-equal, about 4 inches long (except the very lowest, which are much shorter, and the very long exserted peduncle), each with a bud at the base, which often grows out into an extravaginal branch; the lowest branches (to 10) recurved, rooting, transformed into stilts, the upper leafy.

Leaves—pretty evenly distributed over the culm, those near the base gradually withering away, leaving the stem naked to 4-14 feet above the ground.

Sheaths—sub-equal (except the lowest), about 6 inches long, slightly longer than the internodes, very tightly clasping the culm, the lower gradually withering away at length.

Ligules—very short, membranous, ciliate, at length breaking up into minute fibres.

Blades—as much as 12 feet by 3 inches, stiff in the lower part, spreading at right angles, then bent or recurved with drooping tips.

Peduncle—long exserted.

Sexual dimorphism—of the spikelets very conspicuous.

Spikelets—strictly two-flowered; glumes equal; rachilla not produced beyond the upper glume.

Glumes—sub-equal, oblong, acute, 1-nerved.

Valves—ovate-oblong, acute or shortly acuminate, 3-1-nerved, glabrous.

Stamina, 2.

Glumes—unequal, the lower as in the male, the upper twice the length or more, linear-oblong, subulate-caudate, slightly recurved, 3-nerved, firmer.

Valves—ovate, finely and long acuminate, 3-nerved.

Staminodes, 2.

—*O. Stapf*, *Kew*.

G. ARGENTEUM (PAMPAS).
 Growing in individualised large thick tussocks.

Rhizome—very short.
Innovation shoots—intravaginal, viz., growing up within the subtending sheath; hence the shoots bunched with the mother shoot.

Culms—biennial; very short (1 to 1½ inch) in the first year, far overtopped by the sheath; when flowering to 3-6 feet high (exclusive the panicle), of the thickness of the little-finger, solid, internodes to about 18, the lower very short, the following gradually longer, from 1 inch to 2 to 2½ feet (the peduncle), only the very lowest with buds (innovation buds); culms hence simple.

Leaves—mostly crowded at the base.

Sheaths—increasing in length from the base upwards, from 2 inches to 2½ feet, several to many times longer than the internodes (the uppermost at length almost equalled, or even exceeded by the peduncle), the lower rather loose in the upper part, the others tightly clasping each other.

Ligules—a dense line of fine silky hairs.

Blades—as much as 5 (rarely 6) feet by ½-inch, very flexible, sub-erect, then long recurved, turned 180° near the curvature, so that the upper and under sides are reversed.

Peduncle—enclosed or shortly exserted.

Sexual dimorphism—of the spikelets slight (apart from the genitalia).

Spikelets—3-6-flowered; the uppermost florets more or less reduced or rudimentary.

Glumes—sub-equal, very narrow, linear, long tapering 1-nerved.

Valves—lanceolate, produced into a very long and fine acumen, 3-nerved, very scantly hairy, or quite glabrous.

Stamina, 3.

Glumes—as in the male.

Valves—as in the male, but always more copiously hairy.

Staminodes, 3.

(To be continued.)



FIG. 104.—*CEROPOGON WOODII*: LEAVES FLESHY MARBLED, FLOWERS VIOLET. (SEE P. 357.)

distinct types, which differ in their mode of growth, as well as in their floral structure. One type is represented by *G. saccharoides*, while the Pampas-grass may be considered as representative of the other group. In order to facilitate comparison, and to render the

"MANUEL DES CULTURES SPECIALES."—Dr. PAUL DE VUYST has issued, through M. OCTAVE DOIN, 8, Place de l'Odéon, an excellent manual on the cultivation of Potatoes, Carrots, Beetroots, Chicory, various cereal and forage plants, Flax, Hops, Tobacco, &c., together with essays on rotations. We gather that the work has been translated from the Flemish. In any case, from the manner in which the teachings of science have been brought to bear on practice, this seems to us one of the best handbooks of its kind.

SPECIES OF SOLANUM.

IN the issue of the *Gardeners' Chronicle* for October 30, a figure of *Solanum cornutum* grown in the Cambridge Botanic garden was given. Other subtropical *Solanum* cultivated this year in the same garden are the following:—

S. aculeatissimum.—According to some visitors this is the most beautiful of all. It grows about 2 feet high, and branches freely, producing a wealth of lovely pale green leaves protected thinly with violet-coloured spines. They are broadly ovate in outline, prettily waved, and cut into short segments. The branches are spreading, violet-coloured on the sunny side, and thickly covered with spines. The flowers are white,

* No doubt with good reason, as the descriptions were utterly insufficient and untechnical. As they, however, have been taken up in various journals on horticulture, they will be mentioned in this place.

is, and pretty, but not conspicuous, and are d by attractive fruit, mottled with pale and en. The young leaves, under a summer sun, ed with violet, and this colour, in combina- the pure cool green of the older leaves, is rly charming. Its habitat appears to be

purpureum.—This is certainly one of the markable and striking. It grows about igh, and branching thinly, exposes freely to dark purple stems, which are covered thickly g stout spines of the same colour, all as sharp es, and pointing slightly downwards. The oo, are thinly provided with these spines, in an inch long on the upper side, and rather he lower. The finer leaves are nearly a foot l all are deeply cut into narrow lobes; the urface is dark green in colour, with mid-ribs

on the upper side, and become dark green with silvery margin, then exposing the pale green or nearly white midribs. They are broadly ovate, with cordate base, and sinuately-lobed margin. The flowers are white, about the size of a Potato-flower, and they are succeeded, after an exceptionally hot summer, by yellowish fruit. This species requires to be sown the year before it is planted out, and if the young plants have been starved in pots it appears to matter little, for when shifted on in the spring, good growth soon follows. It is a native of Abyssinia.

S. robustum.—There is perhaps no other so stately and handsome as this well-known species. It grows in an ordinary season about 4 feet high, and produces leaves nearly 2 feet long and about 16 inches broad, furnished on both sides with broad brown spines. They are elliptic-ovate in outline, boldly sinuated and strongly decurrent. The entire plant is more or less

the best. It attains a height of about 4 feet, with single stem, bearing dark green leaves nearly 2 feet long; they are broadly ovate, cordate at the base, and divided, about half-way to the midrib, into bold segments, five or six on each side. The spines are not a feature, but numerous short ones are borne on the petioles and midribs. Its habitat is not recorded.

In the Cambridge Botanic Garden these *Solanums* form a very ornamental feature. They are cultivated in a large bed, about 16 feet across, in groups of about five of each species, and usually some other subjects of interest and beauty are introduced, partly for the purpose of occupying the ground until the *Solanums* themselves can utilise it all. They must have plenty of room; rich soil is essential at all stages, and with the exception of *S. marginatum*, *S. robustum*, and for safety's sake, *S. Warscewiczii*, all may be raised from seed sown early in March.



FIG. 105.—THE TERRACE AT "THE ROOKERY," STREATHAM COMMON. (SEE P. 357.)

white. The flowers are greenish and rather cuous, producing small green fruits, with darker colour. It is a native of Brazil.

marginatum.—This is the strongest-growing of all, g a height of 6 feet, and producing several s. It is quite spineless and entirely glabrous, as blackish and foliage dark green. The re above 9 inches long, and are divided into ree to seven narrow divisions, with unbroken and tapering to a point. The flowers are urple in colour, and somewhat ornamental, ed by egg-shaped green fruit. Under the ame there is a figure in the *Botanical Maga*-349. It is properly called *S. aviculare*, and is as the Kangaroo Apple. It is indigenous to ia and New Zealand.

marginatum.—Of all the species, this is one of known, it being a common sub-tropical in , in the London parks and elsewhere. It grows ½ feet high, and is remarkable for the snow-omentum with which the stems and leaves are . The older leaves lose much of this covering

covered with ferrugineous tomentum, which gives it a very characteristic appearance, and colours the young leaves with bright reddish-brown. The stems are perfectly erect, and begin to branch only at the end of the season, when a few white flowers are produced, never in our climate succeeded by fruit. Seeds must be sown the preceding year. It is a native of Brazil.

S. sisymbriifolium.—This is distinct in character, differing from all other species, and is a plant well worth growing. The stems branch freely and spread, with a general height of about 4 feet. They are covered with orange spines, and bear leaves of moderate size, deeply pinnatifid, with divisions wavy and lobed, almost Fern-like in effect. The flowers 1½ inch in diameter, vary in colour from violet to white, and add considerably to the beauty of the plant. The fruit of a globose shape, and bright red in colour, is attractive. This plant is known in gardens as *S. Balbisii*, and seeds are received under various names. It is a native of Brazil.

S. Warscewiczii.—For its fine foliage this is one of

The treatment of the plants should be so calculated that they can be planted out from 48-sized pots early in the month of June. *S. giganteum*, and one or two other species, have been grown, but none do so well as the above. *R. Irwin Lynch*.

RAYLEIGH VICARAGE.

SITUATE at the top of the main street of the little Essex town of Rayleigh—itself in an inviting position—the picturesque vicarage enjoys an enviable site. Embowered amidst trees, it embraces from parts of its old-fashioned garden a prospect extending over many miles of the peninsula lying between the rivers Crouch and Thames. The land by the rivers is flat and rather monotonous, but there are visible hills in the distance. Afar off in a south-westerly direction may be descried Danbury Palace, the former residence of the Bishop of St. Albans; and in another direction the woods everhanging Billericay. At a greater elevation than the vicarage are the remains of earth-works known locally as The Mound, and ascribed to

Sweyne, the owner of the place at the time of the compilation of *Domesday Book*. Altogether, the surroundings of the place have numerous attractive features.

On the occasion of my visit, the hospitable vicar (Rev. R. C. M. Rouse, M.A.) was my guide, and he had many noteworthy features to point out in his garden. Although the vicarage, with its velvety lawns opposite north and east fronts and adjacent garden, is situated only a short distance from the highway, it is completely shut out from public view by large, handsome trees, and only becomes visible on the visitor reaching a bend in the drive leading to the front doors. Among the trees referred to above may be mentioned a grand specimen of *Platanus orientalis*, having a straight, clean stem for about 20 feet, and a girth of 10 or 12 feet, and a large, uniformly-shaped head; Norway Maple and Sweet Chestnuts are also noticeable trees. The other fine specimens consist of Deodar Cedar, double-flowered Cherry, and a double-flowered pink Hawthorn, with a thin stem but an enormous crown; a good example of *Araucaria imbricata*, about 55 feet high, having a main stem about 3 feet in circumference close to the ground, and healthy branches brushing the closely-shaven lawn on every side but the south-west, the only exposed point.

The light loamy soil resting on clay is just suited to the requirements of this species, and the tree bears cones of a size similar to those I observed on a tree in the grounds of Alderbury Vicarage, Salisbury, a few years ago, a fact that was noticed in the *Gardeners' Chronicle* at the time, both fine specimens, and growing under like conditions as regards situation and soil. Furthermore, I may mention that I have seen several good specimens of this tree in robust health growing in the peaty soil of Branksome Dean (Lord Wimborne's place near Bournemouth), and in the midst of Pine-trees, as showing that some trees flourish up to a certain age in soils of quite an opposite description, so long as the needful shelter is afforded them, and that they only exhibit signs of distress when the roots have ceased to extract nourishment from the soil, and the top-growth ventures to push above the shelter hitherto afforded by neighbouring trees and shrubs.

The finest specimens of the tree *Pæony* (*Pæonia moutan*) which I have hitherto seen were going out of flower at the time of my visit (May). These are growing in a flower-bower; and they are about 6 feet high, and as much through, the individual flesh-coloured flowers being some 7 or 8 inches in diameter—full solid blooms. The kitchen garden was well-cropped with seasonable vegetables; and the gardens and glasshouses reflected much credit on the "vicar's gardener," H. W. Ward.

METHODS OF PROPAGATION.

(Continued from p. 286.)

HARDY SHRUBS, &c., FROM CUTTINGS.—The genus *Ligustrum* (Privets), among which *L. ovalifolium* is pre-eminently the most useful, may be struck from cuttings taken at any time when the sap is not in active circulation, but the best time is during September and October, and the pieces may be put closely in rows in a shady border, from which they will need to be lifted and transplanted in the following autumn.

Millions are used in London and other towns, as all the varieties resist the deleterious action of coal-smoke. It has, however, a rival in the Japanese *Euonymus*, especially near the sea, where the broad-leaved Japanese Spindle-tree grows with such vigour that it quickly forms bright green hedges, even within the spray of the sea. This *Euonymus*, of course its variegated forms, may be raised from cuttings at any period of the year, but the best result is procured by taking the cuttings and bedding them in the autumn. There is no shrub that likes the sea-shore better than this, except the Tamarisk (*Tamarix Gallica*), which will grow right down to the tide-line, and seems to revel in the salt spray. A very singular fact may be noted, that when this plant is growing miles from the sea, if one puts the tongue to a growing shoot it tastes of salt, and on stirring a weak

solution of silver nitrate with a bunch of the foliage-covered twigs, a turbidity is caused in the liquid, showing the formation of silver chloride, through the presence of minute quantities of common salt.

While speaking of plants of the seaside, I must not forget the New Zealand Speedwells and their varieties, *V. Andersoni* and *V. Traversii*, which in the south and west districts flourish exceedingly, and yield their blue and white spikes of flower most freely in spring and autumn. All are easily increased by cuttings of the young wood, planted in the open border, or under handlights.

A pretty little evergreen shrub of late introduction, the *Olearia Haasti*, which yields its minute composite white flowers in such profusion in May and June. It may be easily propagated by cuttings of the young wood taken with a heel. There are still among evergreens the *Mahonias*, *Skimmias*, and hardy *Heaths*; and among deciduous shrubs, the *Elders* in variety, and *Lilacs*, all of which can be increased by cuttings of the ripe wood taken in the early autumn, and bedded-in in light soil under handlights, where they will root quickly and make plants fit to plant out in the following autumn.

Fruit-stocks.—In addition to trees and shrubs, there are some very important fruitstocks raised from cuttings that are in constant request in nurseries, while Gooseberry and Currant bushes of all kinds are thus obtained. First, the Paradise stock, so useful in budding and grafting Apples to form early fruiting, and fertile pyramids may be increased as follows:—Take a straight piece of ripe wood about a foot long, and cut it square at the thick end and diagonally at the point. Such cuttings may be inserted in rows in moist, fresh soil, and should be trodden in firmly. Should this be done in early autumn, before all the leaves have being shed, the young stocks will have rooted freely, and be ready to plant out the following autumn, and if well cultivated, should be ready for budding by the following July; but it is advisable to give them at least two years before commencing to work them. The other stock is the common Quince, used to work Pears upon, in order to induce a greater production of fruiting-spurs.

The cuttings should be made in the same way as the Paradise stock, but need not be quite so long, and they should be bedded in some spot where the soil is rather moist, such as the banks of a stream, or the side of a ditch, as the Quince loves moisture. *Experience.*

(To be continued.)

FORESTRY.

PLANTING AND THINNING SPRUCE FIR WOODS.

I THINK a great deal of nonsense is often written about the German system. For instance, an example of the poor results of imitating the German methods was quoted in the column on forestry a few weeks back. The writer described a plantation of Spruce which had never been thinned for fifty years, and imagined it an exact model of the fine forests of the Black Forest. He was surprised when they were blown down, and derided all other systems but the extremely wasteful one of open woods.

The sylvicultural system most common in Germany is the "clear cutting system," and this species commonly grown is the Spruce. The Spruce is grown in nurseries, and planted out in the forest, at about three to five years of age, at a distance generally of 3 by 3 feet apart. Naturally, the struggle for existence commences at a very early age, and then the forester steps in and makes the first thinning, or rather clearing. By the time the Spruce is fifty years it will have been thinned several times. Thinning is a process which needs considerable experience and practical knowledge. The object of the German foresters is to obtain tall trees with well-developed crowns, fair girth, and above all, no large branches below the crown. The proper density is reached when the shade is just sufficient to

kill the lower branches and any undergrowth of weeds. If there is an undergrowth of weeds it will suck out moisture and salts necessary for plant absorption, and greatly impoverish the soil. The other extreme, namely, insufficient thinning, is even more disastrous, and was the mistake made in the Spruce wood referred to above. The crown becomes cramped and small, so that the trees cannot assimilate sufficient carbon dioxide from the air, and lose all vigour. Also in the struggle for existence, the trees mutually draw one another up in height in their efforts to obtain more light, and the thin, brittle, wand-like poles that result are at the mercy of the first gale of wind. I very much doubt also if the species was suited to the locality. It is well known that Spruce has very superficial roots, and unless it has plenty of moisture, it is not likely to thrive; and for various other reasons, Spruce does not appear to be suited to the greater part of this country.

I should like to add a word in favour of properly stocking a wood. If a wood is over-thinned, as is generally the case in England, the trees are able to increase considerably laterally, as well as in height growth; and since the assimilating surface is far greater than in a less open wood, the result is a greater increase of volume. On the other hand, in a wood that is properly stocked, the number of trees per acre is far greater, and nearly all the timber is in the stem, and not in the branches. The trees also are more even grained, cylindrical, and free from knots in the wood. Besides the quality of the wood, the great defect of open woods is that an undergrowth of weeds can spring up. This sucks up moisture and salts necessary for plant nutrition from the substratum of the soil, and prevents dew reaching the soil. In any other country less suitable to the production of timber, this would be absolutely fatal.

If, however, the reason for open woods is that quick returns are required for the capital invested, I think "the coppice with standard" system could be a happy and far greater success. H. C. W.

VINES AT AIRTHREY CASTLE, NEAR THE BRIDGE OF ALLAN.

AIRTHREY has long been famous for its noble lake, expansive park, fine Sycamores, Beech, Oaks, Chestnuts, and other timber trees; its thriving plantation of the choice Conifers around the mansion, and grand clumps and masses of *Rhododendrons* and *Azaleas*. Situated between the mansion and the kitchen gardens there are some immense masses of *Kalmia latifolia*, possibly the finest in Britain, from 6 feet high and upward, which bloom in great profusion every year. The kitchen garden is warm, sheltered by the bottoms of the rising woods, and is thus specially well sheltered on two or three sides. It is enclosed by walls well clothed with fruit trees, which were rather thinned of their fruits this year, through the snaps of cold that are so often felt in the valleys in blossoming time. The standards and bushes fringing the main walk, however, mostly escaped the spring frosts, and bore good crops this year. The kitchen and fruit garden was enriched by some six or seven wall-furnished, skilfully-planted borders of herbaceous perennials and annuals. Among these *Hollyhocks*, *Dahlias*, *Phloxes*, *Delphiniums*, and immense clumps of the pure white *Anemone japonica* were specially prominent. A fine border of *Roses* was also a notable feature of the kitchen garden.

Passing rapidly through it, the ranges of fruit-houses was reached. This consists of six divisions—the first, a Peach-house furnished with two fine fruitful old trees of *Stirling Castle*, and *Royal George* Peaches. The next to this was a vineyard, planted in May of this year, with *Appley Towers*, *Lady Hatt*, *Mrs. Pearson*, *Cooper's Black*, and *Madresfield Court* Vines, and here, leaf and "timber"—the latter is the right word—were all that could be desired.

The third house is also a vineyard, planted with *Hamburgh*, the Vines in their fourth year, and studded with the finest, blackest bunches that I have seen. It is a common failing of this fine Grape to lose its dark colour as it increases in sweetness during

the late autumn and winter. This deterioration is sometimes attributed to a lack of ventilation and of water at the roots; in some cases the colour is lost by the exposure of the bunches to the occasional strong rays of the autumn sun, and possibly this is in part what Mr. Rutherford suspects is the case here. Certain it is, however, that the fact that most of his finest bunches were papered at the time of my visit showed this. One hardly knew which to admire the most, the size and substance of the foliage, the cinnamon-brown tint of the young shoots (which had almost the ring of metal when tapped), or the jet blackness and fine bloom of the berries.

The fourth viney contained Muscats of Alexandria in their sixth year, which were carrying crops, fine in bunch, berry, and finish.

The fifth viney entered is a mixed one of late varieties in their second year, each carrying a test bunch or two to prove, were proof necessary, their reserve of vitality in the present, and their ample and abiding performance in the future. A cool regimen from start to finish is the surest receipt for keeping Mrs. Pince Black Muscat as black as sloes. I travelled many years since from London to Exeter to learn this lesson. I found the original Vine growing almost in an open shed in fine colour, and have never forgotten the lesson, nor known the cool treatment to fail. Hamburg treatment rather than Muscat or Alicante colour Mrs. Pince and Muscat Hamburgs the best. The sixth house was filled with Royal George Peaches and Elrue Nectarines.

Behind this chief range of glass are the usual sheds, potting-benches, stoves, and a Mushroom-house white with "buttons," Melon and Tomato-houses being filled with a fine lot of Chrysanthemums for winter work. Greenhouses and plant-stoves for decorative purposes, cut flowers, &c. Near here, too, is a thriving collection of alpine and herbaceous plants on picturesque masses of rockwork, and on the gardener's cottage close by a magnificent plant of the *Wistaria sinensis*, which clothes it with beauty every year.

Vine growers and showers of the present and the future will have to reckon with those youthful Vines at Airthrey, as in Mr. Rutherford's able hands, and with many factors of soil and site to back up his undoubted skill, these Vines are bound to beat all their past records. D. T. F.

THE ROSARY.

ROSES, WHAT TO PLANT, AND HOW TO PLANT THEM.

(Continued from p. 325.)

In the Tea-scented class there have been a few good additions; probably, the most generally popular Rose is Maman Cochet—but as it was sent out in 1893, and as it is very generally grown and known, there is no need to say anything about it. Sylphe, sent out by Messrs. W. Paul & Son in 1895, is a Rose which all lovers of Teas ought to be anxious to obtain; it is a very vigorous and free-flowering variety, and although the form is globular, and not pointed as Teas I think ought to be, it is sure to find favour.

Muriel Grahame, which is a sport from Catherine Mermet, obtained by Mr. Brown, of Reigate, and put into commerce by Messrs. Alex. Dickson & Sons, Newtownards, has received such distinguished honours that it is sure to be in great demand: it retains all the good properties of the Rose from which it sported, which it resembles in colour (except that it has a pinkish centre); but when a Rose has obtained the Gold Medal of the National Rose Society, and has twice been awarded a Silver Medal as the best Tea Rose in the exhibition, it needs no further recommendation. Some have indeed doubted whether the sport will be constant, but judging from the analogy of other Tea Roses, I think we may fairly conclude that this will remain true.

Empress Alexandra of Russia, a fine high-coloured Tea sent out by the Waltham Cross firm, and has been much admired during the past season; the colour is rich lake-red, shaded with orange, a peculiar combination but very striking. There are several other Tea-roses which I find recommended in various ca-

logues, but they have not been brought forward so that one can judge safely concerning them, and now that there is such a large number of fine varieties of every colour, it is wiser to wait a little before adding them to collections: such are Emile Gonin raised by Guillot, Madame Louise Gravier raised by Gamon, Souvenir de Jeanne Cabaud by Guillot. As two of these are from the celebrated Lyons firm, which has given us so many good Teas, we may hope that they may be valuable additions to our collections.

With regard to hybrid Teas, there has been a considerable addition during the past two years; the cry has gone forth that they are the Roses of the future, and that for all decorative purposes, and for continuous blooming, they are to be preferred before all other classes. I have always contended that it was a mistake to make a separate class of them, and with the obstinacy which I suppose belongs to old age, I still cling to my opinion. The confusion which I thought would be likely to arise seems to increase



FIG. 101.—AN AGED APPLE-TREE, AT "THE BUCKERY," STREATHAM COMMON. (SEE P. 357.)

daily; thus, I saw that a very well known amateur has, in a contemporary, started the notion that Mrs. John Laing ought to be added to this class—at least, the writer says it has Tea blood in it, therefore it is a hybrid Tea. One of our largest growers of Roses said to me the other day that La France, which was sent out as an H.P., and was then transferred to the H.T. class, is really a hybrid from a China Rose and not a Tea Rose; while a writer in one of your contemporaries last week says he cannot understand why Kaiserin Augusta Victoria should be ranked as a 'hybrid Tea,' evidently agreeing with the late Mr. Geo. Prince and others, who regarded it as a pure Tea. In fact, I see in one of our most accurate Rose catalogues that it is classed amongst the hybrid Teas, and the following remarks are given in the same catalogue on the whole section:—"In some cases the hybrid perpetual percentage is so marked, that they should rather be classed as hybrid perpetuals." Exactly so; then why should they have been separated? Some of these, too, are single, like Bardou Job, or semi-double, like Gustave Regis. Amongst the newer varieties which, under whatever class they may be placed, are deserving a place in our gardens from their freedom of flowering and beauty of colouring, may be classed—

Madame Pernet Ducher, a Rose which has sometimes been overlooked. It is described as a canary yellow, with a light tint of cream on it.

Marquise Litta (Pernet Ducher, 1893) is a brilliantly-coloured Rose, of good constitution, and very free-flowering. Two other Roses, which no one will regret adding to their collections, are Madame Pierre-Cochet (N.) and George Nabonnand (T.), the former very striking in its colour, which is deep orange-yellow, somewhat in the style of William Allen Richardson. The latter, while very beautiful for the garden, is also found often available for the exhibition stand; it is a pale flesh, shaded with rose, of a good form and substance, and an excellent grower. There are two other Teas which I think promise well—

François Dabreuil, one of the darkest of the red Tea Roses, full and of good form, but I fear it has got a touch of that violet shade, which turns badly when it is a little past.

Princess de Venosa, which I do not find in many catalogues. It is said to be fawn-yellow, shaded with gold and violet. I had a nice bloom of it the other day (November 11), but I am glad to say I did not discover any traces of violet.

There is another class of Roses to which attention has been drawn of late years, viz., the China or Bengal Roses, the old monthly Rose, whether in its common form in the dark variety. The latest additions to this class have been—

Laurette Messimy, a rose shaded with yellow, very pretty and distinct.

Duke of York, rosy pink and white, in out-door cultivation the pink becoming crimson.

Irene Watts, a white Rose, tinted with salmon-pink; and above all,

Queen Mab, which has been exhibited at the Drill Hall by Messrs. W. Paul & Son, and has been much admired. It is well suited for pot culture, as the plants are covered with beautiful blooms of a colour an apricot shaded with orange and rose. These will form admirable plants for the front of Rose-beds, and are also well adapted for pot-culture. *Wild Rose*.

(To be continued.)

ROSE: CLOTH OF GOLD.

This much-lauded Rose is sometimes called Chromatella, and was sent out in 1843. Until Maréchal Niel appeared in 1864, everyone raved about it as being the best yellow Rose we had.

During the summer of 1893 I saw a grand old plant, the main stem covered with lichen, 15 inches in diameter [?], in full flower. Since then, only a few stray flowers have appeared. Last July, I saw an old plant, of the same growing, upon a mill-house in mid-Sussex. The aspect is north-east, and sheltered by a belt of high trees and shrubs. The plant was simply covered with pale sulphur-yellow blossoms.

Ten or twelve years ago, we had several maiden standards left over from the previous season's working. Almost without exception these flowered the following summer, but most were killed before passing through a second winter. In spite of these two grand old specimens in this neighbourhood, I should be very chary about recommending Cloth of Gold for any but an exceptionally warm and sheltered position. The knife should never touch it, except to cut away frost-bitten wood.

A seedling from this, named Comtesse de Beaumetz, was introduced by Nabonnand in 1876, but is not sufficiently distinct. It is rather singular that such an authority as Mr. William Paul should class this with the Noisettes, and yet put Maréchal Niel among the Teas. He also has Bouquet d'Or as a Noisette, but Gloire de Dijon as a Tea; but if we venture into comparing and distinguishing these two classes, we soon get into a hopeless muddle, and the blending of them under the title of Teas and Noisettes by the National Rose Society was a good thing. A. P.

ORCHIDS AT "THE DELL," EGHAM.

THE fine show of summer-flowering Cattleyas, and the gorgeous display of summer and autumn-flowering Denrobiums in Baron Schroder's famed collec-

tion having passed away, the display is continued by the varieties of *Cattleya labiata*, *C. aurea*, and *C. Bowringiana*, which with a few hybrid *Cattleyas* and *Laelio-Cattleyas* (among which *L.-C. x Statteriana* is very noteworthy), which brighten the large house devoted to *Cattleyas* and *Laelias*. Among the specimens, several were noted of more than general interest by reason of their being old inmates of our Orchid-houses. Of these perhaps the most interesting is the plant of the original *Cattleya labiata*, and which was probably obtained from division of a plant which has been in this country for upwards of half a century. Many similar examples of the success of good cultivation could be found in The Dell collection, where plants obtained from Rucker's and from Day's collections are still growing with unabated vigour, two large pans of *Sophranitis grandiflora* originally belonging to the latter now sending forth some twenty or more flowers each. Similar experience was noted among the varieties of *Coelogyne cristata*. In a house devoted to these plants there are huge plants of *C. cristata alba*, and the Chatsworth and other varieties, some of which have been grown up from small plants, with but three or four pseudo-bulbs, and some of which now take four men to move them about conveniently.

The *Odontoglossum*-houses contain most of the valuable and beautiful varieties which have appeared, such as *O. crispum* *Schroderianum*, *O. c. Ballantinei*, *O. c. apiatum*, *O. c. Stevensii*, *O. Pescatorei* *Schroderianum*, *O. P. Veitchianum*, &c. It is a thing almost unknown to lose any of these grand varieties, and although propagation is very slow, still duplicates of many of them have been secured by division, and that, too, without interfering with the flowering of the plants, most of which are again sending up very stout spikes. Only a few are in flower at this season, but the varieties of *O. Rossii majus*, *O. Cervantesii*, and some others of the smaller species still bear flowers.

In the *Masdevallia*-house were observed in flower some good plants of the showy *M. macrura*, the small and neat *M. Wagneri*, the pretty pale yellow hybrid *M. x Hincksiana*, and the blush-white *M. x McVittie*, as well as the singular *M. (Scaphosepalum) pulvinaris*, and others of botanical interest. Here too instances of sustained good condition and vigour were some large panfuls of *M. racemosa* (*Crossii*), which for many years used to baffle the endeavours of importers and cultivators; and several dense plants of *Cryptophoranthus Dayanus*, all propagated from an original bit of moderate size. Mr. H. Ballantine, the gardener at The Dell, has a happy method of finding out the right quarters for his plants, and a no less praiseworthy plan of "letting well alone" when they are thriving satisfactorily; and the Baron himself often makes a suggestion for the improvement of the condition of a plant, which generally has the desired effect. In one of the houses a good show of *Vanda corulea*, some of the varieties having very large flowers of a charming tint of blue, was noted; and some plants of *Vanda Sanderiana*. The varieties of *Vanda tricolor* and *V. suavis* are in fine condition, promising well for bloom. In the small intermediate houses were remarked many large-flowered varieties of *Laelia pumila*, and some *L. Dayana*, several varieties of *Lycaste Skinneri*, *L. cruenta*, *Oncidium Forbesii*, *O. pretextum*, *O. varicosum*, and other *Oncidiums*, &c.

In the large stove, the centre of which is occupied by gigantic plants of *Anthuriums* and other foliage-plants, is the remnant of a splendid show of *Dendrobium Phalaenopsis Schroderianum*, including a very pretty clear white variety. Many grades of colouring are represented, but in size or colour none equals the original plant, which was in The Dell collection for some years before the species began to be imported in quantity. Also, very finely in bloom were good specimens of the large white *Dendrobium formosum giganteum*, the fragrant *D. aureum*, &c.

Among the *Cypripediums* in flower, *C. lusigne* *Sanderæ* is a splendid example, its soft yellow and white flowers being far superior to other yellow varieties beside it; or, indeed, to all of the other *Cypripediums* at present in bloom at The Dell.

The winter-flowering *Calanthes vestita*, *Veitchi*, and the still finer hybrids raised at The Dell, the best of which is *C. x Baron Schroder*, have formed gigantic, healthy-looking pseudo-bulbs, and are sending up a profusion of stout spikes; the two immense plants of the yellow *Sobralia xantholeuca* are also well set with buds; the collection of *Phalaenopsis*, which in times past has been the least satisfactory of the subjects grown, are at last affording good results; the house of *Laelia anceps* will in due time be a grand sight; and the other fine things grown here are well up to their usual standard of excellence.

The large house of *Chrysanthemums* is filled from end to end with a splendid show of very fine blooms, and most of the best new kinds are represented.

NURSERY NOTES.

TURNFORD HALL NURSERIES, NEAR CHESHUNT.

PLACED end to end it is calculated that the glass-houses on Mr. T. Rochford's vast establishment would extend over ten miles, and both the structures and the plants grown in them are kept in such perfect condition that they would put most of our best private establishments to shame in the matter of order, cleanliness, and good culture, qualities which Mr. Rochford holds as much a necessity as a virtue to the grower of market plants on a large scale. Orchids have of late years been extensively added to the number of plants grown for sale, and for supplying cut flowers, and remarkably well has the culture of this class of plants been grasped. So much is this so, that the large quantities of showy species here grown compare favourably with the remainder of the excellent stock. Two or three of the long and comfortably-heated houses are filled with *Cattleya labiata*, whose brightly coloured flowers make a fine display. As they approach maturity they are cut and sent to market, where they find a ready sale. A house of *Cattleya Warszewiczii* has many very richly-coloured flowers. These command even a higher price than *C. labiata*, but as the plants are less productive they would not be so profitable. *Cattleya aurea* is a favourite in the market, its large yellow and purplish-crimson fragrant flowers are liked by everyone, but owing to difficulties in the way of its importation, some thousand or so plants are all that have been stocked as yet. These are growing splendidly, and many are in flower. *Cattleya Gaskelliana*, *C. Mendeli*, and *C. Mossii* are also grown in quantity; and a batch of *C. Trianae* are establishing, to furnish flowers in the dull season.

Several houses are devoted to *Cypripediums*, of which the varieties of *C. insigne* take the lead because they can be supplied in quantity, and they are among the best for the purposes of cut flowers on account of their durability. A large quantity of white and coloured varieties of *Laelia anceps* is grown, up to their best, and the plants are plentifully furnished with flower-spikes; a quantity of *Odontoglossum Rossii majus* give a good show of bloom; and a large batch of *Laelia pumila*, of the very best type, has many large and richly-coloured flowers upon the plants. This importation produced one pure white variety of great beauty, and another now in bloom promised in the bud to be equally good, but on opening it has developed colour.

For market purposes, Mr. Rochford finds the old species, which have always been favourites in gardens, still hold their own. Hence, he grows *Dendrobium nobile* largely, and the recent importations have contained many fine varieties. Of these the most remarkable is the pure white form, in which the colour seen on the labellum in other white forms is entirely obliterated, the plant being the first true albino furnished by the species. In one of the houses a batch of *Vanda corulea*, giving a good show of light-blue flowers, was remarked, and among them the charming *V. corulea* *Rochfordiana*, a pure white form with a pink lip, which secured an Award at a recent meeting of the Royal Horticultural Society.

Other showy species that are grown in quantity, and are doing well, and in many instances contributing a good show of flowers, are *Odontoglossum grande*, *Oncidium tigrinum*, *O. Papilio*, *Cypripedium Lawrenceanum*, *Laelia Dormaniana*, *Dendrobium formosum giganteum*, *D. Phalaenopsis*, *Miltonia spectabilis*, and in lesser quantity many other good species. Several houses are used for *Odontoglossum crispum*, which it is intended to grow largely, and with a view to that object fresh plants are being imported.

PALMS AND FERNS.

These useful decorative subjects fill numerous houses, there being many thousands of *Kentias*, from the small plant up to the large specimen reaching up to the ridge of the large Palm-house, and all are alike perfect in foliage, fresh, and spotlessly clean. *Latania borbonica* occupies a leading place among Palms, and one long house is filled with a new variety of it with bright, light yellow-coloured foliage—a charming novelty. *Cocos Weddelliana* is grown in quantity; also *Corypha australis*, *Seaforthia elegans*, and all the other species, which are of quick growth and neat habit. One warm house has a number of beautiful specimens of the rare *Licuala grandis*, and here and there are other rare species, which are cultivated for the sake of variety.

The Ferns, of which hundreds of thousands are grown, are principally of the known market sorts, such as *Pteris serrulata*, *P. tremula*, *P. cretica*, and the many fine hybrids which the growers of market Ferns have been instrumental in raising; also *Polypodium aureum* and *Adiantums*, among which *A. cuneatum* takes the lead.

Of other foliage plants, *Pandanus Veitchi* fills a large house with very pretty white and green variegated plants. Some houses of *Crotons* and *Dracenas* are brilliantly coloured. Of the latter, in spite of the many new varieties, imported or raised of late years, *D. terminalis* and *D. t. stricta* form the bulk of the kinds grown.

One house is filled with *Cycas revoluta*, the foliage of which is used for cutting, and the supply seldom equals the demand. *Asparagus plumosus* is also grown extensively for cutting. One house is brilliant with the scarlet spathes of *Anthurium Scherzerianum*, several others are white from end to end with fragrant sprays of *Lily of the Valley*, a supply of which in flower may be found at Turnford Hall every day in the year. The crops, which cannot be got by forcing, are secured by retarding immense quantities in freezing chambers, established by Mr. Rochford at great cost, but which he considers among his best business transactions. In these chambers the *Lilies* are kept at about 5° under freezing-point, Fahr., and with snow on the wall of the chambers, even in the height of summer, and here they can be retarded for any reasonable time without injury to their flowering properties, and so taken out and placed in warmth for flowering as required. It is intended to use this system of retarding flowers more extensively in other subjects, as well as *Lily of the Valley*, and experiments will doubtless furnish some interesting facts.

The houses which have been used for *Tomatoes* are now filled with excellently-flowered *Chrysanthemums*, their blooms cut with a good length of stalk daily, being taken over to the well-appointed buildings where the market flowers are packed, and where in a few minutes, in the hands of those skilled in the work, they are put up in bunches, which, though seemingly carelessly done, it would be difficult to improve on, no matter how long a time was spent on the work. Still in the open ground or under slight protection, are many thousands of *Lilium candidum*, *L. Harrisii*, and other *Lilies*, and several large vineries are heavily cropped with *Black Alicante*, *Gros Colman*, and other Grapes.

One of the most pleasant things about the vast and still growing establishment, which finds employment for a great number of men, is the evidence to be seen in many things of the care which Mr. Rochford takes in studying the comfort and well-being of his men, and the good understanding which apparently exists between employer and employee.

CHRYSANTHEMUMS AT MR. C. TURNER'S.

During the past few weeks the Chrysanthemum display at Mr. C. Turner's, Royal Nursery, has been open to the inspection of the public, many of whom have taken the opportunity of enjoying the floral treat provided. The display is concentrated in four large houses, and besides embracing those grown for the production of large blooms, it includes immense numbers of decorative bush plants, and those for affording quantities of cut blooms for supplying the large demand for white and coloured flowers at the Christmas season and later, for which there is a large and increasing demand. Among the best of the large Japanese flowers *Phœbus* was conspicuous among the yellows, and is undoubtedly one of the best exhibition varieties. *Modestum* is another fine incurving yellow seen in good form. T. Wilkins, a fine bronze coloured flower, was noted in fine condition; this variety has been seen in first rate condition this season in many an exhibition stand. Australian Gold, Beauty of Teignmouth, Graphic, Mrs. C. E. Shea, Mrs. Dr. Ward, Richard Dean, Rose Wynne, Niveum, H. L. Sunderbrück, and Mrs. A. Hartshorn, among many others were remarked in good condition, carrying large flowers. I also noted blooms of the old variety *Japonais* of exhibition size; it is not often seen now. Two remarkably dwarf growing varieties, carrying large flowers, were noted in *Souvenir d'une Petite Ami*, white, and *Comte F. Lurani*, striking rose-colour, the edge of the petals lined almost white. The old *Val d'Andorre* is grown in quantity as a dwarf decorative variety; also *Putney George* and *Cullingfordi*. Late-flowering Japanese are grown in large numbers for cut flowers, the favourite variety being *L. Canning*, which had just been disbudded, nice bushy plants, about 2½ feet high, carrying eight or ten good flower-buds, many of which will be fully open at their best about the end of the month of December. Others were *Princess Victoria*, *W. H. Lincoln*, and *Christmas Gold*.

Good incurved blooms of *C. H. Curtis*, *Globe d'Or*, *Ami Hoste*, *Barbaran*, and *Jardin des Plantes*, were noted among many others as being particularly fine. Other houses contain hundreds of plants of *Bouvardias* and *Tree Carnations* coming into flower, the first-named looking likely to furnish immense quantities of flowers. The principal varieties of *Bouvardias* grown are *Alfred Neuner*, *President Garfield*, *President Cleveland*, *Hogarth*, *Priony Beauty*, and a variety that originated here, named *intermedia*. It may be mentioned that the whole of the Chrysanthemums are in a very clean and healthy state, and the grower may be congratulated on their appearance and immunity from "rust" and all other diseases. H.

CONTINENTAL NOVELTIES.

M. LEMOINE, OF NANCY, OFFERS—

Deutzia corymbiflora.—A new shrub, found in Se-tshuen (China) by the Abbé Farges, and introduced into France by M. Maurice de Vilmorin. It is a plant with rather slender branches, the new stems erect, round, the bark lenticellate, internodes rather long; leaves large, almost sessile, or the petiole not more than a fifth of an inch long, oboval, lanceolate, pointed, very finely dentate, wrinkled on both surfaces, with very fine hairs above, the upper surface deep green, the lower clear green. The stems of the preceding year bear in every axil composite panicles, nearly corymbiform, each containing from fifteen to forty flowers. The pedicels are very short and very slender, the calyx cupuliform, clear green, bears five little dark green teeth. The five petals, well open, wide at the base, pointed at the tip, are fully spreading. The stamens, five large and five small, have a very wide winged filament on which the clear yellow anther is directly inserted; the three styles are very short, the height of the small stamens, and concealed by them. The filaments of the stamens form a close and firm column, persistent during the flowering. The appearance of the flowers is a little like that of *Solanum jasminoides*. The usual flowering season

is during the first fortnight in June; the shrub is then covered with a profusion of little snow-white flowers; the new stems often tipped in August and September by fresh blooms.

Deutzia Lemoinei compacta.—*Deutzia Lemoinei* is now established as an outdoor plant, and for forcing. This variety has the same origin, is much more dwarf, and tufted naturally; the flowers are the purest white, and nicely expanded; the spikes so numerous as to form a thicket of bloom. The plant altogether lighter, more elegant in blooming, is to be recommended for pot-culture and market uses.

Diervilla (Weigela) Middendorffiana.—*Weigela* with large yellow flowers is not a novelty, as it is described and figured with a coloured plate in the *Flore de Van Houtte* in 1856, but it has been almost entirely lost in Western European cultivation. The



FIG. 107.—SALPIGLOSSIS VARIABILIS SUPERBISSIMA "EMPEROR."

species appears to come from the cold or elevated districts of Mongolia or Siberia, whence it was brought to us through Russian horticulturists. Its habit and foliage resemble those of *D. rosea*; the flowers, axillary, grouped in three or four, are as large as those of the preceding species, and of a beautiful saffron-yellow colour, dotted in different shades, which graduate according to the extent of expansion of the corolla.

Hypericum galioides.—A woody species from North America, forming a little hardy thicket furnished with long linear leaves, grouped like those of *Galium*, and very decorative; the small flowers, which are clear yellow, with very numerous stamens, and arranged in successive rows, cover the shrub profusely during all July and August.

Philadelphus Falconeri.—This plant, the origin of which is uncertain, must have been introduced from China or Japan to the United States. It is a hardy shrub, growing nearly 10 feet high, with fine and slender branches, internodes long, leaves rather small, lanceolate, hardly dentate; flowers in small panicles

at the tip of the axillary branches, formed of four pointed, pure white petals, and rather resembling those of *Clematis montana*. We received this shrub from Professor Sargent.

MR. F. C. HEINEMANN, ERFURT.

Salpiglossis variabilis superbissima "Emperor."—This variety of *Salpiglossis variabilis*, for the name of which we happily are not responsible, is an introduction of the Erfurt firm of Mr. F. C. Heinemann. The plant is distinct in habit, as well as in the flowers; it forms only one stem, which often grows as thick as one's finger, bearing on its end a bouquet of flowers veined with gold, and larger than those of the *S. grandiflora* type. The edge of the flower, as will be seen from the illustration (fig. 107), is not so deeply incurved as in this variety, which gives it a more rounded appearance.

COLONIAL NOTES.

ST. VINCENT.

"At St. Vincent, Coffee and spices are being grown. The value of the spices, chiefly Nutmegs and Mace, exported in 1895, was £1812.

"In the development of these and other industries (including that of sugar), valuable services have been rendered to the island by the botanic station established in the neighbourhood of Kingstown. The plants distributed have included 34,335 Arabian Coffee, 3164 of Liberian Coffee, 5343 Cacao, 1183 Nutmeg, 2390 new and improved Sugar-canes, and 1108 Limes. The total plants distributed have amounted to 53,224. Large stocks of plants are still available for distribution. The Curator visits various parts of the island whenever his duties allow, and gives assistance to all engaged in agricultural pursuits. Bulletins with agricultural information are issued, and gardeners are trained in horticultural methods. The present curator, Mr. Henry Powell, is devoted to his duties, and his services are widely appreciated amongst all classes of the community. If the stringent measures of economy necessitated by the poverty of the colony are carried out, it is feared the usefulness of the station will be destroyed." *Report of West Indies Commission.*

DOMINICA.

"The botanic station at Dominica was started in 1890, in a charming spot immediately behind the town of Roseau. Mr. C. A. Barber, late Superintendent of Agriculture in the Leeward Islands, states in a recent report:—"The founding of the botanic station in Dominica will probably, in future years, be referred to as one of the greatest strides in the progress of that island during the present period." There are large nurseries of economic plants and experimental plots for Cacao, Coffee, Kola, Rubber-trees, spices, and fibre-plants. The station, which may be regarded as one of the most successful in the West Indies, has distributed 165,000 economic plants during the last six years, or an average of 29,000 per annum. The present curator, Mr. Joseph Jones, is described as having rendered 'great services universally acknowledged by the planters of the island.' The cost of the station in 1896 was £400, while the net receipts from the sale of plants were £99. It is proposed in the 'Additional Note' at the end of this report, to extend the work of this station, employ agricultural instructors, and establish an industrial school in connection with it." *Report of West Indies Commission.*

MONTSERRAT.

"A botanic station, with a gardener in charge, was started at Montserrat in 1893, on a small plot of land to the South-west of the town of Plymouth. The space available was utilised for the cultivation of a selected number of economic plants: large numbers of these were raised and distributed during the last six years. Amongst them were 8000 plants of Blue Mountain Coffee from Jamaica, 1800 Cacao, 2000 Nutmeg, Pine apple suckers, Grape Vines, 800 suckers of the Jamaica Banana, Liberian Coffee, Kola, &c. The gardener also gave information in regard to the cultivation and treatment of new plants. The principal recipients were estate proprietors, and not small cultivators. The latter had evidently not been induced to start new cultivations, as, owing to the absence of shipping facilities, there was no prospect of being able to find a market for the produce. Owing to the straitened circumstances of the island, the botanic station has now been abolished, and the services of the gardener diverted to other duties."

The work done at this station, with the limited means at its command, was of a distinctly promising character. It was the only organisation existing in the island for improving and extending the cultivation of industrial plants, and its abolition destroyed the hope of immediately benefiting the agricultural interests of the island." *Report of West Indies Commission.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Bush-fruit.—Brief lists of select varieties of Apples, Pears, Plums, Cherries, Peaches, and Nectarines, were given in the *Gardeners' Chronicle* for October 23, (p. 288). We supplement these lists by giving similar ones of Gooseberries, Currants, Raspberries, &c.

Gooseberries.—*Green*: Greengage, Green Hedgehog, Keepsake, and Rosebery; *Red*: Whinham's Industry (the earliest Gooseberry in cultivation) Crown Bob, Ironmonger, Lancashire Lad, Red Champagne, Rifleman, Warrington; *White*: Cheshire Lass, Whitesmith, and White Swan; *Yellow*: Golden Drop, Golden Lion, Yellow Champagne, and Yellow Ball.

Currants.—*Red*: Raby Castle, Knight's Early, Reine Victoria, Prince Albert, Fay's Prolific; *White*: White Dutch, White Transparent, and Shilling's Queen; *Black*: Baldwin's Champion (an immense cropper, the largest, sweetest, and best for market), Lee's Prolific, and Carter's Champion, an excellent variety, almost, if not quite, identical with Baldwin's Champion.

Raspberries.—Superlative, the largest and heaviest cropping Raspberry in cultivation, producing immense conical-shaped fruit of excellent quality. Next to this in point of size, cropping, and other good qualities, comes Hornet; Carter's Prolific, and Baumforth's Seedling, also first-rate varieties. The Antwerp and Magnum Bonum are good white varieties. Belle de Fontenay is the best autumn-bearing Raspberry that I am acquainted with.

Figs.—White Marsouilles, Brown Turkey, Castle Kennedy, and Brunswick are trustworthy varieties for out-door culture, and they come into bearing and ripen their fruit in the order in which the names appear. The trees should be planted against walls having a south aspect.

Winter Treatment of Figs.—The old-fashioned and erroneous way of treating Fig-trees during the winter and early-spring months, with a view to securing a crop of fruit the following summer and autumn, finds but few followers now-a-days. I refer to the practice of unnailling the branches on the approach of winter, and bundling them up together on either side the centre of each tree and half-way down the wall, securing them thereto with tarred string, and then covering the branches thus tied together with a good thickness of bracken, which was generally allowed to remain round the branches till the end of March or early in April, on the assumption that protection of the kind indicated was necessary to secure a crop of fruit the following year. This practice thwarted the object in view, by rendering the trees so treated somewhat tender, and at the same time causing them to push into growth before their proper time, and subjecting them to check by exposing them to spring frosts when the covering of Fern was taken off, with the consequent failure of crops. It is about twenty-three years since I first condemned the above-mentioned practice in the *Gardeners' Chronicle*, and recommended one which I have practised with very satisfactory results during the interval between 1871 to 1896—namely, to leave the branches of the Fig-trees undisturbed and unprotected during the winter and spring months—that is, to afford them no protection of any kind in southern and western counties in England, Wales, and Ireland, and the southern counties of Scotland. In exceptionally severe winters, following a wet autumn, the unripened terminal shoots will be cut up pretty much from the effects of frost; but this may not happen once in ten years; moreover, the trees thus cut back recover the following summer, and bear a fair crop of fruit as well—such at any rate is my experience.

Planting Fig-trees.—A space of from 15 to 20 feet should be allowed between the holes in planting Fig-trees in their permanent positions on walls, planting young Peach, Nectarine, or Apricot-trees temporarily between them. In planting young Fig-trees, the

holes should be made about 2 feet deep, and extend 2½ feet from the wall, and 1½ foot on either side the central position marked thereon for each tree. Break up the soil in bottom of the holes, and place therein a 6 inch layer of brickbats or clinkers, broken somewhat fine on the top, covering this with turves, grass-side down, or long litter, so as to ensure good drainage. And plant the trees in a mixture consisting of about four parts good sandy loam and one of old mortar-rubble, working this well in among and around the roots in planting, shortening straggling roots, and cutting-back damaged ones, before covering them with the compost indicated. The planting of all kinds of wall-trees may be done in the manner described above; and the sooner the work is done the better. If the border in front of the Fig-trees is manured for vegetables, it will be necessary frequently to lift the points of the roots to the surface; and in cases of gross development of shoots and loss of fruitfulness, partial transplanting will have to be resorted to, and a mixture of the materials given above substituted for the rich soil thrown out from among the roots. Apples and Pears being still in full leaf, will not be ready for lifting and sending away from fruit-tree nurseries much before December.

THE KITCHEN GARDEN.

By W. POPE, Gardener, Highclere Castle, Newbury.

Manuring and Digging Land.—The manuring and digging of vacant plots of land may now begin, trenching it if that operation has not been done for three or four years, and bastard-trenching or plain digging one spit deep that which has been more recently trenched, and leaving the surface in all cases in a rough state, or ridging it. Ridging is always preferable with stiff clayey soils, and never does harm to medium ones; but it renders light, porous soils unduly dry, and not fitted for inducing seeds to germinate freely; and these light soils are really better flat-dug or trenched in late winter or spring. If wireworm be troublesome, spread gas-lime at the rate of 20 bushels per acre before digging; or dress the land with it after digging at the rate of 30 to 35 bushels, and leave it on the top till the spring, at which season it may be forked in. Still soils are, as a rule, benefited by trenching once in four years. If there is much undecayed vegetable matter in the soil, as will sometimes be the case in old gardens, unslaked lime should be incorporated with it, and in trenched soil some of it should be stirred into each layer of spits, no manure or other dressing being applied that year. For the benefit of those who may not have practised ridging and trenching, it may not be amiss to explain the process, simple though it be. After spreading the manure evenly over the ground, if the piece be of 15 to 20 yards wide, stretch the line down the middle of it, and cut a little furrow along it with the spade, then proceed to open a trench at whatever depth the land is to be trenched or dug, at the end of one half, and wheel the soil on to the alley close to where the last trench will be of the other half. This is a great saving in labour, and it is applicable to nearly all wide areas. The trenches may be 2 feet to 2½ feet wide. In the case of heavy soils the trenches should run north and south, in order that the sun may shine on both sides of the ridges, and there may be no wet furrows. Sometimes Potatoes are planted in the trenches after making the soil of fine tilth with the hoe, but the early crops of tubers should not be so planted, rather the land should first be levelled, and then planted with the tubers.

Early-forced Potatoes.—Where very early Potatoes are required, the sets should now be placed eye end uppermost in boxes of leaf-mould or cocoa-nut fibre refuse, and forced in gentle heat. Veitch's Early Ashleaf and Sharpe's Victor are general favourites for early forcing. Sutton's A1 is a first-class variety for quick returns and good quality, and should be given a trial by those who are unacquainted with it. Where ordinary dung-pits are used for forcing Potatoes, they should now be filled with fresh tree leaves, three parts consisting preferably of those of Oak or Beech, mixed with fresh stable-manure one part. Those who have no leaves to make use of, must employ stable-manure, which will require almost as much preparation as if it was going to be used in making Mushroom-beds. The heap of leaves and litter must remain till fermentation has taken place, and be turned twice or thrice afterwards, letting it ferment anew after each turning over. It will then be in a fit state for making up a Potato-bed. If a bed is built on the ground, it will have to be 5 feet high at the back, and 4 feet at the front, and a foot bigger all

round than the frame which is to be put on it. In all cases the materials must be put together compactly, and more straw must be used at the outsides of the free-standing bed than is recommended above, or it will not be kept together. When the heat has reached 75° to 80°, put into the pit or frame rich light soil to the depth of a foot, planting the sets when this mass of soil has got warm throughout. Hot-beds built on the ground should be surrounded with litter or straw-hurdles. Even if very early forcing be not practised, a large heap of tree-leaves and manure, prepared for use, will become necessary shortly for a variety of purposes.

FRUITS UNDER GLASS.

By F. HARRIS, late Gardener, Eastnor Castle, Leicestershire.

Strawberries.—The earliest plants standing on hot-beds consisting of tree-leaves, or in mild heat without these useful aids to forcing, will be thrusting up their flower-stalks, and in order to get the stalks as long and strong as possible at this season, when they are naturally slow of development, and grow in length but little, and nestle in the crowns, the plants must be removed to a light position in a forcing-house, where they can be afforded a day warmth of 60°, and by night of 50°. Nothing higher than this should be afforded for a week or ten days, and then there may be an increase of 1° or thereabouts, and so on till the maximum is reached, any undue hurrying being always followed by disaster. When the flowers begin to expand, the air should be rather dry than moist, which can be done by omitting to damp down, not by the use of a greater degree of artificial heat; and air must be admitted in moderate amount in favourable weather, and if it can be admitted night and day without causing draughts, or impinging on the plants direct, it will strengthen them. Artificial fertilisation must be practised with all the earlier batches, distributing the pollen by passing a rabbit's tail over the blooms in the middle hours of the day. Having obtained a fair set, thin the fruits as soon as it can be seen which are going to develop properly, leaving four or five on a plant, later successions carrying more. Introduce successional plants at fortnightly intervals, regulating the number and the interval by the demand, fifty plants being regarded as an average number of plants to place in heat at one time. Ascertain the state of the stock of plants as regards moisture at the roots if they are under glass, dryness being very prejudicial to them. If frames are not available for the protection of the plants, some other kind of covering should be at hand, to use in the event of heavy rain or snow falling, or severe frost occurring. The pots should in any case be plunged in coal ashes or tree leaves.

Tomatoes.—The plants for affording fruit should be divested of all lateral shoots and superfluous foliage, not however stripping the latter to an injurious extent, but thinning it out here and there. Tomatoes should be gathered when fully coloured, and the ripening carried out in a warm, dry house. To make sure of the flowers setting, pollination should be artificially carried out. Young plants raised from seed in the autumn for fruiting in the early spring, must be kept near to the glass in a warm pit or house, and wide apart, to avoid spindling. Each will require a neat stake to which to secure it, for should a stem be twisted or bent, the plant never does so well afterwards. Seeds may yet be sown of free-setting varieties, sowing thinly, and covering lightly, and standing the seed-pots on mild bottom-heat, and removing them when germination has taken place, to a shelf in the stove or other warm-house. When a few leaves are made, prick-off the seedlings into small pots.

Cucumbers.—From the present time till the middle of January is a bad interval of time for the Cucumber-plants, and every effort must be made to keep them clean, healthy, and progressing. Let the beds be afforded tepid-water; decaying leaves and deformed fruit removed, and the surface slightly stirred—if no roots are injured thereby. Top-dressings will also be required from time to time, which may consist of fresh horse-droppings alone, mixed with loam. Destroy aphids and thrips before they increase much. Use the syringe overhead very sparingly; and maintain a bottom-heat of 80°, and top-heat by day of 70° to 75°, and 65° at night. Damp the walls, paths, and borders once or twice a day. Do not allow fruits to remain on the Vine after they have become of useable size, and thus will the resources of the plants be husbanded to the uttermost.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Deciduous Trees and Shrubs.—Any contemplated planting, transplanting, or alterations in shrubberies or elsewhere may now be carried out whilst open weather, which is favourable to operations of those kinds, continues. It may happen that the soil is in a dry state, especially in proximity to trees and shrubs, or on slopes, and application of water may be necessary a day or two before transplantation is begun. In the case of new plantations on heavy or very moist land, it may be that the drainage must be attended to first if the plants are to make satisfactory progress. It is always safest in woodland, or on lawns or in shrubberies, to put in drains at a depth of 3 to 4 feet, and 20 feet apart; and instead of using the common rain-pipe or tile, to fill in a V-shaped water-course with clean road metal, flints, granite, or brickbats, and use these to place an inch or two of hogget, or sycamore-wood, or sods 2 to 3 inches thick; even the outlet drain may be constructed in the same manner. Such drains will remain unchoked with tree and shrub roots, whereas drains of the other kind soon get choked and useless for the purpose they were put in. *Azalea pontica*, *A. mollis* are going to be planted, and peat of fair quality, consisting of the upper layer cut at about 6 inches thick, if possible, is obtainable at small cost, this may be used in a roughly broken-up condition, with or without an addition of coarse sand, as may be determined by the presence or absence of sand in the peat. Failing peat, light turfy man mixed with leaf-mould, sand, decayed manure should be employed. Plants that do not come under the category of peat-loving may be afforded new pasture-loam and charred earth and manure. Trees and shrubs should be chosen which fall in with the general effect, and are not incongruous in growth and colour with the surroundings; and if they are such as are beautifully coloured foliage in the autumn, so much the richer and pleasing will the garden or pleasure-ground look at that season. The hardy ones are among the prettiest of these, and where there is no lime in the staple, these should be freely planted. The common yellow and orange-flowered varieties grow quickly. Some of the Japanese *Acer* form interesting shrubs of moderate size, and are useful for planting in shrubberies, the finely cut foliage of various hues being very decorative. I may mention *A. palmatum* of a variety of shades of greyish green; *A. p. linearilobum* with long, narrow leaves, shoots of a reddish age; *A. sanguineum* with deep crimson-coloured foliage; *A. p. septemlobum* elegans that becomes a rich green early in the season, changing to a deep red shade at a later period; *A. p. atropurpureum* with foliage of a coppery-purple tint, a bright-coloured stem; and *A. ampelopsifolium* with foliage assuming the coloration of the Virginian Creeper. Stronger growing are *Acer platanoides*, the Norway Maple, of which there are several varieties which have beautiful autumn foliage. *Cassia japonica*, a hardy shrub growing 8 to 10 feet in height, and of a spreading habit of growth, produces long racemes of yellow flowers; *Eucryphia pinnatifolia* is another handsome plant with large white flowers that come in July and August. The early-flowering Almonds, the earliest among spring-flowering shrubs, should not be omitted; the crimson and rose double-flowered varieties of *Amygdalus persica* (Peach); *Calycanthus floridus*, or American Lilipies, with brownish-purple, fragrant flowers; *Lagunias* in variety, both the early-flowering *M. conspicua* and later *M. purpurea*; *M. Soulangiana*, *M. S. x Lennel*, *M. tripetala*, and *M. Thompsoniana*, to form a succession; *Cerasus* in variety, including the drooping-habited Bird-cherry, *C. Padus*; the Judas-tree, *Cercis siliquastrum*; white and yellow-flowered Brooms *Laburnum vulgare* *C. dami*, and others; *Liquidambar styraciflua*, the foliage of which assumes rich tints in the autumn; *Philadelphus coronarius*, *P. microphyllus*, and *P. radiiflorus*; *Prunus myrobala*, fl.-pl., and *P. laurardi*, with its handsome purple foliage, with *P. nioha*, all of which flower in the spring months; thus *Cotinus*, which dies off of bright golden tint; *ambucus nigra aurea*, with its yellow variegated foliage, is handsome throughout the summer months, and are several others of the same species. *Spiræa* (shrubby) offer great variety, in which the following are desirable:—*S. arifolia* (one of the handsomest), *S. Bumalda*, *S. Douglasii*, *S. Lindleyana*, *S. prunifolia*, fl.-pl., a low shrub, whose leaves are very handsome in their autumn tints; *Crataegus* of the Hawthorn section in variety of colour, both single and double-flowered; *Syringa* (Lilac), including *S. Josikea*, and

some of the newer varieties, as *Souvenir de L. Späth*, *Marie Legraye*, *Leon Simon*, and *Virginité*, not forgetting the floriferous Persian, *Lilacs*, the *Gueldres Rose*, *Viburnum Opulus*, *V. lantana*, *Deutzias* in variety, *Kolreuteria paniculata*, &c.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorset.

Aërides, Saccolabium, &c.—In the East Indian-house, such species as these, the warm-growing *Vandas* and *Rhynchosyris*, will need special attention, as many of them have almost ceased to grow. These evergreen epiphytes should be rested for a shorter space of time than deciduous species, although the greater length of time they are in an inactive state the stronger will be the new growth. For the present let the amount of water at the roots be gradually lessened, and it will be noticed that when the roots cease to grow in length, the tips gradually turn from green to white, the only indication that the season of rest has come. Only enough water should then be afforded as will keep the leaves fresh and green till the roots again begin to make growth. Sometimes these plants suffer from "spot" during the winter, and when this appears, let all the sphagnum-moss between the roots be removed, and the interstices filled up with clean crocks. By this method the plants may be kept sufficiently moist by pouring water through the crocks once or twice a week, and the danger of over-watering is got rid of. These plants are apt to lose their lowermost leaves in the winter, the cause of which is an excess of artificial heat in very cold weather, too much moisture in the air of the house, and drip. For several weeks past the terrestrial species, *Habenaria militaris*, *H. Susanæ*, *H. carnea* and its pure white variety, *nivosa*, have been in bloom; and now that the flowers are beginning to fade, the leaves and stems will soon turn brown, and if allowed to remain these will in time fall away naturally. The plants while in this stage should be placed near the roof, in order to get the new tubers ripened. Care must be taken to gradually withhold water when the leaves begin to change colour, and the stems have decayed; a little water may be afforded only when the surface-soil is dust-dry, by which means the tubers remain plump during the entire season of rest. It is not advisable to withhold water altogether, as excess of dryness will cause the tubers to shrivel, and make weakly growth in the spring.

The Cattleya-house.—Plants of *Odontoglossum citreum* having ceased to grow, the water afforded may be gradually diminished and discontinued by the middle of next month, and keep the plants near the light. *O. Reichenheimi*, having also ceased to grow, should be removed to the driest part of the cool-house, and be afforded water in sufficient quantity to keep the roots and pseudo-bulbs plump. Plants of *Miltonia vexillaria*, now in full growth, should also be examined occasionally, slitting the sheath around the leading breaks, so that the young roots may escape and enter the compost. The slitting should be carefully done in several places, and the outer covering pulled off in small pieces. At this period, too, the young leaves stick to each other, and must be separated carefully. The tips of the young leaves frequently turn of a brown colour and damp off at this season; and to avoid this, keep the plants drier at the root for a few days, and do not moisten the sides of the pots. *M. Rozii* and *M. Phalaenopsis* are species that make their growth at this season; place them, therefore, in the warmest part of the house, and let them have abundant root-moisture. Plants of *Odontoglossum pulchellum* will now have made up the new pseudo-bulbs, and as it is a plant apt to lose its roots if the compost be kept very moist, put the plants in a light position in the cool house. The same remarks as regards watering applies to the rare *O. Londeboroughianum*, which should be placed in a rather dry part of the Mexican or intermediate house.

THE APIARY.

By EXPERT.

Long Hives v. Tiering-up.—Why do not those who work for extracted honey use a long hive, holding the same number of frames that they wish to use in one story, instead of tiering-up several hives one on top of the other, as is advised in our bee papers, and quite generally practised? This brings to my mind what happened years ago, and as it will serve to answer the above, I will give it here. Some twenty or twenty-five years ago, Mr. D. L. Adair, of Kentucky, was quite

a prominent bee-keeper and writer for our bee papers. He used and advocated a long hive to be used on the principle of spreading frames out horizontally instead of tiering one hive above the other, claiming that thereby a colony of bees could be kept in a normal condition, and while in that condition, no swarming would occur. This he termed the long Adair hive. Being always ready to test all new ideas, I made two hives, each 4 feet long, during the next winter. One of these I worked and extracted, and the other for comb honey on the Adair plans. The ones worked for comb honey swarmed, either because the idea was faulty or because I did not know how to fully manage such a hive, or for both reasons; so after repeated trials to keep them at work in the 4-foot hive, I let them have their own way, when they had swarmed after being returned the fourth time. The one worked for extracted honey did splendidly, but another worked on the tiering-up plan did nearly or quite as well, and by practical knowledge I learned that I could work a two or three-storey hive much more easily than I could this long one. To take the frames out, the person's back must be bent just enough to make it the hardest kind of work; and the bees which were shaken off the combs, would crawl all over the sides of top of the hive in such numbers as to make it almost impossible to close it again without taking up much valuable time. With the two-storey hive the bees can be shaken on to the top of the frames in the lower hive, with but very few taking wing, when the bulk of them will crawl below till the hive is closed, and the operator can stand erect, or nearly so, while doing the work. But the worst thing about it was that I lost both colonies during the next winter, and during every succeeding winter that I tried to winter bees in them. So far as I could see, they were prepared to pass the winter, as well as any of the other hives, which came through the winter in good condition. I used these hives for honey making during several years, putting colonies from other hives into them in the spring as often as those in them died, but with no better success than at first; and finally becoming disgusted with them, I tore them to pieces, and made the materials into other hives. I know of nothing better than the ordinary hives two or three storeys high, according to the populousness of the colony which is being worked.

PLANTS UNDER GLASS.

By G. H. MARCOCK, Gardener, Luton Hoe Park, Luton.

The Stove.—Now that winter days with greatly reduced sunlight have arrived, the gardener should rearrange the plants, placing those that are not sight and are at rest in the less sunny and inconspicuous places in the house, and those plants with persistent foliage and abundant flowers in the more prominent parts of the house. It is always difficult at this season to avoid crowding the plants, but this should be avoided as much as possible, affording the plants as a whole all the sunlight practicable. Plants of *Allamanda*, *Clerodendron Balfourianum*, *Dipladenia*, *Stephanotis*, *Cissus discolor*, &c., trained on overhead wires and rods should be taken down and the shoots twined around three stakes, keeping the soil dry, previously to pruning them at the end of the present month. Doing this will economise space, and afford such plants as *Codiaeums*, *Ixoras*, and others, room for display, especially if these can be elevated here and there on flower-pots or other contrivances. These plants should be rested, turning them round twice a week. *Gloriosa superba* is another plant that may be similarly dealt with; and *Pandanus Veitchii* will also be the better for having less water afforded. Any *Pandanus* that have grown too large for ordinary purposes should be thrown away; or, after removing all the leaves, the old stem may be reserved for propagation purposes in the early spring. *Medinella magnifica* may also be kept drier at the root, but not so much so as to cause the wood to shrivel. This is a glorious plant, and worth having in every place where large specimen-plants are liked.

Caladiums.—The tubers must be wintered in the stove, or in stove temperature, either keeping them in the pots in which they grew, or turning them out into silver-sand. A few of the earlier-rested tubers, of *C. agryites* may now be shaken out, and placed in 60's, standing them on a side stage; but the strong-growing varieties should be kept in their winter quarters till the turn of the year. Let the lights of the house be cleaned of conserve and dirt, stopping all faulty places in the putty, and making it, as far as possible, weather-proof, cleaning stages, &c., and lime-washing the brick-work. For the present a temperature of 65° by night and 70° by day will suffice.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Nov. 23	Royal Horticultural Society's Committee.
SALES.	
MONDAY, Nov. 22	Bulbs, at Protheroe & Morris' Rooms.
TUESDAY, Nov. 23	Bulbs, Plants and Roses, at Protheroe & Morris' Rooms. Sale of the Glass Erections, Plants, Fruit Trees, &c. at The Gardens, Stone Grove, Edgware, by Protheroe & Morris.
WEDNESDAY, Nov. 24	Bulbs, at Protheroe & Morris' Rooms. Sale of Specimen Shrubs and Conifers, at the Feltham Nurseries, Feltham, by Messrs. Protheroe & Morris.
THURSDAY, Nov. 25	Plants and Roses, at Protheroe & Morris' Rooms.
FRIDAY, Nov. 26	Bulbs, at Protheroe & Morris' Rooms. Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—41° 5'.

ACTUAL TEMPERATURES:—

LONDON.—November 17: Max., 57°; Min., 49°.

PROVINCES.—November 17 (6 P.M.): Max., 56°, Scilly, York; Min., 47°, Stornoway.

Weather generally mild, dull, and damp.

A FONDNESS for dabbling in the Water-Plants. water seems to be a general characteristic of the human race, especially in its youthful stages. As age increases, the "dabbling" is replaced by admiration and curiosity, and ultimately often by study of the water and of the creatures in it. Certainly, for many of us, there is no more attractive part of the garden than the lake, or the pond. Even the backyard may be furnished with its tub, and that tub made resplendent with the lovely hues of hardy Water-lilies and yellow Villarsia, with purple *Sarracenia* as an edging. We write of what we have seen and known both in the City of London and at the West End! A book treating on the formation and management of such a "garden," or on the utilisation of humbler opportunities, is therefore—has been rather—a desideratum. The want has been supplied in large measure by the elegant volume before us.* It is not given to everyone to be able to grow the *Victoria* in the open air in a heated pond, still less to accommodate its noble foliage and stately flower under glass. But hardy Water-lilies, including many other "aquatics," may be grown by those whose means and opportunities are but scanty. The introduction of the beautiful series of hardy Water-lilies by M. MARLIAC, has given an impetus to the cultivation of these plants, which not even the cult of Roses, Orchids, and Chrysanthemums can quench, and for those who have the command of waste-steam, the possibilities are greater still.

In the present volume, the author gives instructions as to the formation and maintenance of ponds and lakes, and has some judicious observations on the planting of the margins of the pond or lake. These are too often left formal and rigid; or, when something more natural and appropriate is attempted, then the tendency is to indulge in curvatures too numerous and too abrupt, meaningless "wiggle-

waggles," which irritate rather than please, and are destructive of all sense of grace or restfulness.

Beauty of appropriateness here as elsewhere is a matter of cardinal importance. We have in mind two town-gardens, both placed in the midst of formal architectural surroundings, the ornamental water in the centre in each case, encircled by or associated with groups of plants. In the one case, the plants are such as possess bold, stately foliage, such as *Musa Ensete*, *Arundo Donax*, Palms, *Aralias*, *Phormiums*, *Agaves*, *Cannas*, *Paulownias* kept cut back, *Colocasias*, &c.; in the other, there are the Sedges, the elegant grasses, the Bur-reeds, the giant Docks, the *Osmunda*, the Yellow-flag, and other plants we are so delighted to meet along the margins of a stream, or in a dell in the midst of the woods, but which look weedy and out of place in a town-square. Some of the plates in this volume afford illustrations of our meaning, whilst *Erianthus*, *Eulalia*, *Papyrus*, and ornamental grasses are fully in harmony with the arborescent vegetation around, the foliage of the *Musa Ensete* seems out of place. Compare, for instance, the plate at p. 38, showing a piece of water edged with *Typha* and ornamental grasses, with that on p. 42, where the harmonious nature of the margin is broken up by the intrusive foliage of the *Musa Ensete*. So, too, the plate at p. 50, shows the formal leaves of the *Victoria* associated with native N. American plants, such as *Golden Rod*, *Achillea*, &c., when *Musas* and "sub-tropicals" would be more in place. But these are matters of taste in which there is room for very wide differences of opinion.

Details concerning the method and time of planting are given, as well as hints on hybridising and propagation.

A descriptive list of the species and varieties of *Nymphaea* and *Nelumbium* is given, with cultural memoranda suitable for those grown in the open or under glass. A similar enumeration is furnished of the miscellaneous aquatic plants, Ferns, hardy perennials, &c., which may be grown in association with or separate from the true Water-lilies.

The book is plentifully illustrated with photographs in which the contrasts of light and shadow are sometimes crude and abrupt, but which are characteristic and really illustrative of the text. Mr. LEONARD BARRON is responsible for the editing of the manuscript and for its supervision whilst passing through the press. He has done his part well, but he would have done it better had he given us an index as well as the table of contents. We strongly recommend those who are interested in this charming phase of gardening, to become the possessors of this book as the practical experience of the author is a guarantee for the excellence of his teaching.

BEGONIA MRS. W. B. HARTLAND.—The fine variety of tuberous-rooted *Begonia* delineated in fig. 108, p. 367, was raised by Mr. W. BAYLOR HARTLAND, nurseryman, at Ard Cairn and Patrick Street, Cork, and is named after his wife. The flowers are pure white, double, and held erect on stout stalks; and the plant is free-blooming, well suited therefore for bedding, and equally suited for cultivation in pots for conservatory decoration. We are indebted to Mr. HARTLAND'S kindness for the use of the woodcut.

ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral Meeting will be held on Tuesday, November 23, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. At 3 o'clock a lecture on "Horticultural Exhibitions, Schedules, &c.," will be given by Mr. JOHN WRIGHT, V.M.H.

SCOTTISH HORTICULTURAL SOCIETY.—The struggle which took place in the Waverley Market, Edinburgh, on Thursday last, was an exciting one, the money prizes in some of the principal classes being of exceptional value. In another column of this issue we publish a telegraphic account of the principal features of the exhibition, which, in most respects appears to have been a very successful one. See p. 375.

THE NEW FLORA BRITANNICA.—In preparing the catalogue of the Lindley Library, this book was lighted on. It is noteworthy as not being entered in *Pritzel's Icones*. In the *Thesaurus*, indeed, it is included under "EDWARDS" with the title "The New Botanic Garden," but in the *Icones*, so far as we can find, it is not cited. This is the more remarkable, as the engravings seem to be excellent and the text trustworthy. It is a book which the plant lover will treasure. Its title runs as follows:—

THE NEW
FLORA BRITANNICA,
ILLUSTRATED WITH
ONE HUNDRED AND THIRTY-THREE
PLANTS.
Engraved by Sanson,
FROM THE ORIGINAL PICTURES,
AND
Coloured with the Greatest Exactness,
FROM
Drawings by Sydenham Edwards.
IN TWO VOLUMES.
VOL. I.
London: Printed for JOHN STODOLSKY, Piccadilly,
by T. BENSLEY, Bolt Court, Fleet Street.
1812.

BAILLIE MEMORIAL FUND.—The Duke of WESTMINSTER as President, has issued an appeal to Mr. BAILLIE'S friends for the purpose of instituting a permanent memorial of Mr. BAILLIE'S services, and in promoting the education and advancement of the large family of children he has left behind.

MR. WALTER SIEHE, the eastern traveller, to whom European gardeners already owe so much for many plants of new introduction, has returned to Mersina from the expedition he made this year to the Cilician Taurus and Cappadocia. His collections of new species, and of such as are valuable to horticulture, are more important than they have been in previous years. Mr. SIEHE now intends to cultivate the plants he has brought home in a garden at Mersina, specially devoted to them, and will then be able to supply well-established specimens whose growth may be depended upon. In this "hortus orientalis," as Mr. SIEHE calls it, he has already a large number of Alpine plants from the Cilician Taurus, besides about 10,000 examples of *Asphodelineae* of different species, such as *A. taurica*, *A. Balansea*, *A. imperialis*, n. sp., *A. Dammeri*, n. sp., *A. Basili*, n. sp., and others; and about 10,000 plants of *Galanthus cilicicus*, Baker. He has also planted large quantities of *Iris persica*, *I. Funonia*, *Colchicum cilicicum*, *C. bulbocodioides*, *Eranthis cilicicus*, *Eremurus caucasicus*, *Muscari alpinum*, *Bellevalia Heldreichii*, *Tulipa pulchella*, *Fritillaria Bornmülleri*, and many more.

MANUSCRIPTS OF GILBERT WHITE.—On April 26, 1895, Messrs. SOOTHEY, WILKINSON & HODGE sold by auction the author's original autograph MS. of GILBERT WHITE'S famous work on the *Natural History of Selborne* for the sum of £294. The same auctioneers will offer for sale on Nov. 25 a still more interesting batch of MSS. of the same author, and of the same work. These MSS. are the original letters which were sent by post by GILBERT WHITE to THOMAS PENNANT between August 10, 1767, and July 8, 1773. These letters were returned to GILBERT WHITE when he first conceived the idea of writing his famous natural history, and from them was drawn up the autograph MS. sold in 1895. The letters are all holograph but four, which are in the hand of an amanuensis, signed by GILBERT WHITE, and all but three occupy four pages folio. They are additionally interesting and valuable from the

* The Water-Garden. . . . By William Tricker.
New York: A. T. Delamare.)

fact that many of the details recorded in them were altered, omitted, or augmented in the published work. They passed after the writer's death into the

never been out of the possession of the family. The second lot of the GILBERT WHITE MSS. is *A Garden Kalendar*, dating from 1751 to 1767. It is the

form of a consecutive diary, recording the writer's almost daily operations on his own land, and notes of the results of experiments tried by him in forcing



FIG. 103.—TUBEROUS-ROOTED BEGONIA "MRS. W. B. HARTLAND." (SEE P. 366.)

possession of his brother BENJAMIN, who was a bookseller and publisher in Fleet Street, and who issued the first edition of the *Natural History*, and they have

author's holograph manuscript, and occupies 424 pages. This has never been published, excepting the portion May 1 to November 16, 1759; it is in the

and hothouse work. This MS. also has been continuously in the possession of the WHITE family, and is very little known. *Times*.

CHRYSANTHEMUM SHOWS are evidently extremely popular with the sight-seeing public. At Birmingham (on the authority of Mr. HUGHES, the Hon. Secretary), as many as 32,558 persons were admitted to the show, and over £600 was taken in cash at the doors. Our report of this exhibition, which was squeezed out of last week's issue, appears on p. 371.

THE MILDNESS OF THE SEASON.—Further evidences of the exceptional character of the present autumn, continue to reach us from many parts of the country. In one case Mr. R. H. BATH, of Wisbech, sends us sprays of fruits from Raspberry, Baumforth's Seedling. They are abundant, and certainly very remarkable.

REMEDY FOR DAMP FEET.—All who possess a garden—all amateurs, professional gardeners, and dwellers in country districts, realise the importance to health of keeping the feet dry and warm, which with the best-made boots and shoes is only possible in snowy and very wet weather when the soles and uppers are coated with dubbing. One of the best of dubbings we are acquainted with is undoubtedly "Gishurstine," a preparation sold by Price's Patent Candle Company, Ltd., Belmont Works, Battersea, S.W., and made, we believe, from a recipe of the well-known horticulturist, Mr. G. F. WILSON of Weybridge, the inventor of "Gishurst's Soap," itself another boon to gardeners and horticulturists generally.

RATING.—An important case in which a nurseryman has succeeded in gaining an abatement of his assessment has been determined at the West Kent Quarter Sessions. The justices, however, have agreed to state a case for the opinion of the High Court as to whether or not market and nursery gardens with glasshouses are entitled to receive the allowance of 50 per cent. off the rates in accordance with the provisions of the Agricultural Rates Act, 1896. The case is reported in the *Estates Gazette*, and we shall publish a fuller report next week.

GRAPES FOR MAIDSTONE.—In view of the fearful calamity which has overtaken our county town, I am endeavouring (says Mr. Wright) to arrange for a supply of Grapes for the sufferers. Nearly 2000 cases of typhoid fever have been recorded, and the distress is terrible. The struggle towards convalescence after attacks of this fever is always a long and weary one. The MAYOR tells me that Grapes are needed, and any one having some to spare, if only a bunch or two, would be performing a good act by sending them. Boxes sent to the MAYOR, marked "Maidstone Grape Fund," will be forwarded to the proper quarter, and both railways, S.E.R. and L.C.D.R., deliver such gifts free. I would gladly send printed labels to any one on the receipt of a post-card. I may add that kind promises of assistance have already been made by several well-known horticulturists, notably Mr. Chapman, gardener to Capt. Halford, Westonbirt; Mr. W. H. Divers, Mr. J. Hudson, Mr. Martin, gardener to Lord Leigh; Mr. W. Taylor, gardener to C. Bayes, Esq., Forest Hill; Mr. Summers, gardener to Lord Scarborough; and "A Friend." Others will be gratefully received. W. P. Wright, Willesborough, Ashford, Kent. [The greatest care must be taken that the patient does not swallow any of the seeds, or even the skins. Ed.]

"THE AMATEUR'S FLOWER GARDEN," by SHIRLEY HIBBERD; new edition, revised by T. W. SANDERS (W. H. & L. COLLINGRIDGE, Aldersgate Street, E.C.). The practical utility of this book has been proved by the long time that it has enjoyed public favour. It is not so technical as to scare the ignorant, nor so simple as to offend them. It is a concise epitome of decorative plants, and directions for cultivating them, both in and out-of-doors. The numerous illustrations are an additional attraction. The volume now before us has been brought up-to-date, and revised; and though it is difficult for one writer to thoroughly enter into the spirit of another, all must agree that in horticultural matters it is

especially necessary to keep up with the times. Those who knew and liked the old edition will, therefore, welcome this modern one.

"GLIMPSES INTO PLANT-LIFE," by Mrs. BRIGHTWEN (T. FISHER UNWIN, Paternoster Square). The sub-title to this book is *An easy Guide to the Study of Botany*, and it might well be thought at first that there are already countless volumes of a similar scope and nature. But Mrs. BRIGHTWEN has the advantages over many of her rivals of being truly in love with her subject, and able to deal with it in an attractive manner. Her easy pleasant style of writing must be familiar to many of our readers who are acquainted with former books from her pen. The present volume is partly composed of articles which have already appeared in *The Girl's Own Paper*, and, in our opinion, the author has hit the happy medium, and is neither so technical as to bewilder, nor so simple as to irritate her young readers. Her subject-matter is further elucidated by illustrations by herself and by THEO. CARRERAS, and is arranged in chapters dealing with the following topics:—"Adaptation, Roots, Tree stems, Leaves, Buds, Flowers, Pollination, Fertilisation, Fruit, Dispersion of Fruits and Seeds, Germination, Physiology of Plants, Insectivorous Plants, and Habit of Growth in Plants." Mrs. BRIGHTWEN's botanical knowledge having been gleaned from the highest authorities, leaves no doubt as to the reliability of her information, which will, as here presented, not merely please but interest her readers, and lead them on to more ambitious works for the study of which she endeavours to prepare them.

BERMUDA LILY DISEASE.—Mr. ALBERT F. WOODS contributes a paper on the "Bermuda Lily Disease," as a preliminary report of investigations undertaken for the United States Department of Agriculture, and which forms Bulletin No. 14 of the Division of Vegetable Physiology and Pathology. In his summary he says that:—1. The Lily disease is characterised by the spotting and distortion of the leaves and flowers, and usually the stunting of the plant. 2. The disease is quite serious on *Lilium longiflorum* and *L. Harrisii*, and also attacks *L. auratum* and *L. caudatum*. It is very prevalent in Bermuda; and in the United States, where the bulbs are forced, it destroys from 20 to 60 per cent. of the crop. It also doubtless occurs in Japan, France, and the Netherlands. 3. There are many theories as to the cause of the Lily disease, the principal ones being worn-out soil, premature removal of flowers and flower-stems, premature harvesting of the bulbs, carelessness in the selection of stock for propagating purposes, bad treatment during forcing, and the work of insects. 4. The work done shows that the disease is due to a combination of causes. In the first place the bulbs have become weakened through improper selection and improper propagation, and this weakening is further increased by the attacks of mites and certain fungi and bacteria. Bulbs which have been weakened in this way might regain their strength if the mites and fungi could be kept down, but those which are naturally weak cannot be made strong. During the time plants are being forced, they may also be weakened by over-watering, and consequent asphyxiation of the roots, or by allowing the roots to become too dry, and then over-watering. The foliage of such plants may be free from spots and distortions, but usually the leaves are badly diseased. 5. The spotting and distortion of the foliage is often due to the direct attacks of several genera and species of aphides, and of the young of the bulb-mite, to the injection of water into the young leaves in watering or syringing, and to the presence of water between the young leaves of plants having soft foliage. The injuries from the attacks of organisms are always more severe on the susceptible or naturally-weakened bulbs. 6. The disease cannot be cured, or even prevented, by adopting any single course of treatment. The fact that the bulbs have become more or less weakened by improper cultivation, selection, and propagation, shows the importance of adopting rigid measures to improve the stock. Only the strong and vigorous plants should be used for propagation. Crop-rotation

should be practised, in order to prevent the increase of mites and injurious fungi. Leave the stems on the bulbs until ripe, and in all cases avoid premature digging. The florist who forces the bulbs should exercise care in planting. Throw out all injured bulbs, and plant in well-drained, well-aerated soil. Endeavour to keep down aphides and mites from the start, and exercise care in watering and ventilating. Avoid feeding with solutions of horse, cow, and sheep manures, and use chemical fertilisers instead."

PUBLICATIONS RECEIVED.—*The Carnation Manual*, edited and issued by the National Carnation and Picotee Society (southern section) (CASSELL & Co., London, Paris, and Melbourne). A new edition of a work which should prove valuable both to the professional and amateur grower. "In it will be found papers from some of the most successful growers of the day, detailing the methods pursued by them, from the first impregnation of the seed to the final staging of the flowers upon the exhibition-tables." Needless to say, the present edition is brought up to date.—*Practical Hints on the Culture of Cacti*, by H. G. BOURNE. This is No. 4 of BROS & SON'S (Salisbury Court, E.C.) "Handy Series of fruits, flowers, and vegetables," and well worth perusal by all who have a fancy for Cacti. It is illustrated, and costs only 2d.—*British Astronomical Weather Almanack and Chart*. This is, we understand, the eighth annual issue of this little book by Mr. B. G. JENKINS. The weather forecasts included time only will test; but there is also plenty of miscellaneous information given.—*Random Shots at Birds and Men*, by "Jim Crow" (Roxburghe Press, 3, Victoria Street, Westminster). A humorous account of some birds and their characters, as compared with those of human beings.—*Dictionnaire Pratique d'Horticulture*. The sixty-fourth livraison of this work is now ready, and completes the fourth volume, the title-pages and reference-tables for which are included in this issue.—*Orchidées et Fougères Rustiques sous le Climat de Genève*. This is an illustrated catalogue compiled by M. H. CORREVOX, and issued from the Jardin Alpin d'Acclimatation, Geneva.—*Liste des Plantes de Montagnes et Plantes Vivaces and Liste Supplémentaire des Plantes Alpines*. These two publications are of a similar character to the last one mentioned, and are also written by and obtainable from M. H. CORREVOX.—*Botanisches Centralblatt*, No. 44.—*General Index*, from vol. i. to lx., edited by Dr. F. SCHAUMBURG, No. 1.

THE WEEPING SPRUCE.

Of all our common Conifers, the Spruce, *Picea excelsa*, is most prolific in variations. Some of these are of extraordinary character, some elegant, others ugly. Of pendulous varieties there are several, but none more remarkable than the one figured in our illustration at fig. 109, from a photograph kindly forwarded to us by Mr. A. D. Webster, the Superintendent of Greenwich Park. The tree, which measures 30 feet in height, is growing at Ide Hill, Sevenoaks, Kent.

HOME CORRESPONDENCE.

THE LINDLEY MEDAL.—Although I did not get the Lindley Medal, it was certainly intended to give me one for two grand examples of *Odontoglossum grande*, which I call *giganteum*, and which were entered in the Royal Horticultural Society's records. I was not so particular in those days, else I would have had a correct measurement taken of the flowers, and it would have been useful now for reference. It is quite thirty years ago since I sent up from Meadow Bank to Mr. A. F. Barron two examples, both with branched panicles of extraordinary sized flowers, half as big again as the best we see now, for one of the fortnightly meetings, held then in the Kensington corridors. The one panicle had sixteen flowers, and the other fifteen flowers, and the substance, the ground-colour, and the blotching were such as had never been seen before nor since up to this day. The Council sitting at the time were unanimous in expressing that such a marked example of cultural development was worthy of the coveted "Lindley Medal." Mr. Barron has

times since told me that no such example of culture had ever been submitted in London, must have been an oversight on the part of the Council to pass it by. I was striving at the time for the coveted Bateman Challenge Gold Medal, and to the grower and exhibitor who should in successive years total up the highest number of marks. It was open to all comers, and foreign, barring the winner of the only

Chron. in 1869, p. 447. But it has not all been plain sailing with me. About twenty years ago, the Council for the awarding of the Neil Prize in Edinburgh, which every three years selects a most distinguished horticulturist, dividing the honours between a botanist of distinction, the one three years, and a gardener who has distinguished himself the alternate three years. I lost it by the casting vote of the chairman. It was awarded to my old and

generally recognised, both at home and abroad, as the standing Orchid collection in the whole country. My distinguished friend, the late Hugh Low, did not, when I was in his nurseries, grow a single Orchid. His son sent from Borneo many plants, but they were generally sold in Stevens' Rooms; and not till after I had gone to Meadow Bank, did the firm grow these plants—and now what a grand lot they are passing year after year through business channels! This is a series of "grumbles," and I would not have been drawn into it, but for the discussion of the Lindley Medal, which I think, ought not to be lost among horticultural honours. James Anderson, Wallace Avenue, Manchester.

PRIVATE CHRYSANTHEMUM SHOWS.—There are certain gentlemen in the county of Surrey who generously and thoughtfully throw open their private Chrysanthemum displays to the public on certain Sundays in November. Amongst these, and residing in the Cranleigh district, are Sir Richard Webster, M.P., the attorney-general, Sir Henry Doulton, Mr. Pandelli Ralli, Mr. W. Webb of Amhurst, Sir R. Carbutt, and others. The attendances reach about 500 at each place, the public coming with eagerness from long distances to see these gratuitous shows. One gardener, remarking to me on the general conduct of the visitors, said that—"formerly they came to admire, now they come to criticise." That is a tribute to the growing interest in Chrysanthemums and their culture which marks the age generally. In such rural districts as these mentioned, where there are few people having leisure, and many are busily engaged on week-days, the opportunity thus offered to persons otherwise debarred from seeing the flowers is regarded as a great boon. That it is so largely availed of, shows how widely it is appreciated. These generous and liberal-minded gentlemen are but doing in their respective localities what the London County Council do so admirably in their parks and gardens. It is also some recognition, doubtless, of the principle that property has its duties as well as its rights; and whilst amongst its rights may be the closing of beautiful parks and gardens absolutely against the public, happily, as seen in this case, there are some owners who think differently and act accordingly. A. D.

FROGMORE ALL-THE-YEAR-ROUND CUCUMBER.—The handsome fruits of this all too-long-named Cucumber, shown to the Fruit Committee at the Drill Hall on the 9th by Mr. O. Thomas, of the Royal Gardens, Frogmore, were of so taking an appearance, that some natural surprise was expressed that they received no award. But the committee, having some time since made it a condition that in future no awards should be made to new or presumably new Cucumbers until the varieties had been tried under cultivation at the Royal Horticultural Society's gardens at Chiswick, they were compelled to be consistent, and refrain in this case from making an award. Had any been made, a pretty hubbub would have been raised by other Cucumber growers and raisers, especially seeing that the fruits came from the Royal gardens. Any suggestion of unfairness would be unjust. Mr. Thomas generally places before the committee only first-rate things, and his success in obtaining awards is due to that circumstance alone. In this case the committee unanimously agreed that the fruits were beautiful ones, and, but for the conditions referred to, they would have obtained an award. As the variety is termed "All the Year Round," it seems but fitting that its merits as an "all-round" variety should be tested by asking to see samples in February. Still the variety, a crossed seedling from Rochford's famous variety, is, for market purposes, too smooth and pale [1]. A deep green colour is an essential, and even spines are favourably regarded by some persons. An authoritative statement on the part of the Council having now been made that it is impossible to carry out a satisfactory trial of Cucumbers at Chiswick, it has been resolved by the Fruit Committee to withdraw the conditions as to a trial there at the close of the year, and to deal with Cucumbers at the Drill Hall on their exhibited merits. A. D.

THE DUTIES OF A SUPERINTENDENT OF A CEMETERY.—A public body advertised in the *Gard. Chron.* for candidates for the appointment of superintendent. I made an application for a form and a summary of the duties required. These are as nearly as possible as follows:—Gardener, caretaker, cashier, accountant, supervisor of headstones; to clean and heat all chapels; to disinfect and clean mortuary,



FIG 109.—A WEEPING SPRUCE. (SEE P. 368.)

working on the same lines as in 1866-67. The was Mr. Veitch, and he had to stand back in a recent competition, when the writer obtained by a considerable majority of votes, the only other Bateman Medal ever offered. It was impossible to say when it was a question of the totalling of very fortnight, and it was a proud day for me. Mr. Bateman, at a full meeting of the Council, the Medal round my neck—a full report of the findings appeared in the columns of the *Gard.*

respected friend, the late Andrew Turnbull, of Bothwell Castle; the Chairman remarking that I was a young man, and could wait a little longer. That was a substantial prize, carrying with it a Silver Salver with a suitable inscription, and generally from £60 to £70 in cash. The happy day for me has not yet come, the Council evidently passing me over because I left gardening and went into business. It is fifty-two years since I left Hugh Low & Co.'s nurseries to enter upon the forming of what was

and receive all bodies; to attend all funerals, and act as sexton; to receive certificates, and attach the same to weekly returns; to attend upon the officiating clergymen for the purpose of filling up and signing a book giving all the particulars of a funeral; to attend at coroner's inquests, also at all committee meetings; and the supervision of grave-digging, and the grounds generally; and this all for the munificent sum of £80 yearly. If the salary had been £200 instead of hardly one, the requirements could not have been more onerous; and it shows unmistakably what a lamentable pass public gardening appointments have come to. *G. D. J.*

COST OF GROUND WORK.—A few days ago whilst in conversation with a gentleman about the excavating and removing of soil to make a lawn-tennis court, I found that he had accepted the figures in an old *Horticultural Directory* as a true and complete means of calculating the cost, and I think it is a pity that any book containing such an amount of good useful information should in any part of it have such erroneous figures. Those to which I more particularly apply these words are: No. 1. Excavating in common soils not exceeding one throw or 6 feet in depth per cubic yard, 6d. No. 2. Filling barrow and wheeling for the first 20 yards, 3d. No. 3. Wheeling every additional run of 20 yards beyond, 2d. The price No. 1 is not far wrong provided the workman can continue to remove the soil to the desired depth with the spade, but as it more frequently happens that after a depth of from 2 to 3 feet has been reached he has either to make use of the pick, or else a very much increased force with his foot, and therefore takes more time to loosen a given quantity, the 6d. cannot be accepted as a sufficient price to excavate a cubic yard of soil, which, I understand, weighs about 30 cwt. [Not so much. Ed.]; and from experience I know that men would rather dig and cast clay in the brick-yard at 6d. per cubic yard than run the risk of meeting with impediments in the removal of the soil to any depth where the subsoil is not easily tested. The price quoted (No. 2) for filling and wheeling 20 yards is such that I have never been able to find men who would do it for the money; and little wonder, for I have found that if a contract is made with three men to remove a given quantity, one of them who is most probably known amongst themselves as the best spademan usually digs and fills the barrows, the others dividing the distance to wheel between them, each being satisfied that in this way the labour is fairly divided; a common price for men to ask being 1s. per cubic yard for excavating and removing 20 yards, 1s. 6d. for 40 yards, and so on for every additional 20 yards which barrow runs. Calculating men's wages at 3s. 6d. per day, if three men must earn that sum at the price given in the *Horticultural Directory*, they would have to dig and remove a distance of 40 yards, no less a quantity than 11½ cubic yards, or about sixteen ordinary cart-loads; but it is seldom men can be met with willing to exert themselves sufficiently to accomplish such an amount of work for the money; and thus, in my opinion, the figures referred to are misleading. *Henry Hulce.*

SITUATIONS VACANT.—The above heading will, I have no doubt, attract the eye of a large number of readers of the *Gardeners' Chronicle*. My aim is not to catch the eye of the *employé*, but to attract the notice of the employers, especially of those who use the advertising columns to fill vacancies that occur in the various departments of their establishments. How frequently we see advertisements for gardeners and other *employés* finishing with the objectionable phrase, "state wages." Now, in my opinion, this is a very difficult point. Most men want as much in wage as they can obtain, and if gentlemen want a good practical man, they ought not to object to pay a good wage, such as would cause him to consider that he was settled, and make him take an interest in his employer's place and property. In "stating wages" when answering an advertisement, a person does not, in nineteen cases out of twenty, know what salary has previously been paid for the same duties, which everyone knows varies much; he naturally does not wish to ask less than has been paid, and at the same time he is afraid of losing the place by asking too much, for well he knows that many employers select the cheapest man, and think they can get a good experienced gardener or other servant for a small wage; for many good men are driven to accept what they can get—but will they stay if anything better turns up? It would, to say the least, certainly be a great saving in disappointments on the part of those

seeking situations, also unnecessary trouble in letter writing and interviewing to ladies and gentlemen, head gardeners, and others if they would kindly state fuller particulars in their advertisements, and above all to specify the amount of wages offered. Persons answering advertisements where wages are stated should be prepared to accept such terms; whereas, when wages are not stated, many answer them, and possibly get chosen from the numbers applying who, after the trouble and probable inconvenience of interviewing, have to say, "No, thank you," simply because the terms are too low. *A. G. L.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

NOVEMBER 9.—Present: Dr. M. T. Masters (in the chair); Mr. Michael, Rev. W. Wilks, Dr. Müller, Prof. Church, and Rev. G. Henslow (Hon. Sec.).

Cattleya labiata, Sport.—Dr. Masters observed that sports similar to those produced at the last meeting, in which two sepals were more or less resembling the labellum, had been sent to him from numerous localities this year. The species was introduced some fifty years ago, and subsequently lost; but it had been lately re-discovered and introduced from Pernambuco.

Carnation Leaves with Horn-like Marginal Outgrowths.—Mr. Michael reported that no trace of acari could be seen, as suggested as a possible cause. Dr. Müller observed that a plant of *Solanum jasminoides* was covered all over with horn-like excrescences. Dr. Masters suggested that they were probably spongy outgrowths from the epidermis.

Stocks, &c., Attacked by Beetles.—Mr. Michael observed that Stocks, Virginia Stocks, and *Nasturtiums* in his garden were attacked and utterly spoilt in a fortnight by thousands of beetles eating the flowers of the two former plants, but the leaves as well of the last-named. They do not entirely kill the plants, which renew both leaves and flowers after the beetles have disappeared. A partial remedy was found in shaking the plants over a basin of hot water. It appears to be *Phyllotreta atra*, one of the numerous "flea-beetles." Miss Ormerod, to whom they were sent, suggests "trying a mixture of equal parts of fresh gas-lime and quicklime, with a much smaller proportion of soot, and about half as much sulphur as of soot. These should be powdered up together very finely, well mixed, and dusted on to the foliage when the dew is on it, morning or evening. Just a sprinkling is enough. It usually acts well if applied as above so as to adhere to the beetles and foliage." She was under the impression, however, "that lime similarly applied would do equally well."

Ivy attacked by Dodder.—Mr. Chas. Herrin of Dropmore sent specimens of Ivy badly attacked by a *Cuscuta europæa*. He remarks, "This parasite has established itself on the west wall of our church, destroying the Ivy with which it is covered. It has been thoroughly destroyed, Ivy and all once, a few years ago; but now that the Ivy has begun to grow nicely again, half covering the wall, it has again appeared, and is destroying it." As the seeds must germinate in the ground, or perhaps in the cracks in the wall as well, the aim must be to kill them before germinating. If the ground by the wall received a good dressing of slaked lime, such might prove effective.

Cot's Orange Apple Striped.—Mr. G. Swales, of Beverley, sent an Apple, mostly red, but striped with green on one side, the latter colour being on the most exposed side. The cause was unknown. Dr. Masters suggested the possibility of accidental crossing having been the cause, for Darwin had described similar results in an Orange pollinated by a Lemon (*Ann. and Pl. under Dom.*, i., p. 399). Mr. Wilks mentioned that a *Bourré d'Amant* Pear in his garden had thrown out a green striped sport, also a bough bearing golden foliage.

Gall on Jessamine.—Mr. Henslow exhibited a large globular gall which he had taken from the stem of this plant. As no fungus was present, it was sent to Mr. McLachlan for examination.

Composition of Potatoes.—Professor Church gave some account of the recent researches of MM. Coudon and Busard on the distribution of the constituents in Potatoes. They found that a slice of a Potato revealed three zones. The external one beneath the epidermis contained 73 per cent. of water, the central holding about 80 to 84 per cent.; that the central part contained the greater amount of nitrogen, the exterior the greater quantity of starch. This accounted for the "bursting" in a floury Potato, which is relatively more free from albuminoid matters. The cause of the interior portion being more consistent is that the starch cells though bursting are held together by the curdling of the albuminoid matters during cooking. The same peculiarities appear in the thirty-four varieties examined. The intermediate zone was also of an intermediate character with regard to its structure and cell contents. It was to be regretted that the authors did not distinguish between the true albuminoids and the amides in estimating their percentage of nitrogenous matter. As a rule, the former amount to 1.3 in Potatoes, but they had estimated them from the total nitrogen as from 1.8 to 2.5. Dr. Masters remarked that these observations

corresponded with the stem-structure of the Potato, in which the cortex was a starch-reservoir as it is in trees while the deeper layers correspond with the phloem or protodermis holding sieve-tubes.

CARDIFF CHRYSANTHEMUM.

NOVEMBER 3, 4.—The eleventh annual exhibition was held in the Park Hall on these dates. Although exhibits were rather fewer than usual, the attendance was large on both days.

The finest flower in the show was shown by R. A. BOWEN, Esq. (gr., Mr. H. A. Joy), a magnificent specimen of *Phœbe*. He won also the 2nd prize in the open large class.

The twenty-fourth incurred class consisted of a remarkably excellent, even lot of blooms. The prize-winners were Sir C. PHILLIPS (gr., Mr. Dumble), and R. W. D. HARLEY, Esq. (gr., Mr. J. Robinson).

The groups were well arranged, but they were weak in foliage plants. The best was set up by Mr. W. TRESEDER, and the next best by Mr. J. GUNS. Mr. W. TRESEDER was likewise winner of the Society's Gold Medal for the highest aggregate number of points.

The best group, consisting solely of Chrysanthemums, was Mr. E. JENKINS', the good quality and freshness of the plants and flowers leaving little to be desired.

Mr. H. A. ALLEN, Pen-rth, showed the finest stand of twenty-four blooms of Japanese; and in a similar class, but unrestricted as regards varieties, Sir C. PHILLIPS had the finest blooms, and Mr. R. W. HARLEY had the 2nd best stand. The Challenge Cup, value 5 guineas, falls therefore to Mr. Dumble, Sir CHARLES' gr., who has worked hard to win it.

For twenty-four blooms of Japanese, in twelve varieties, confined to exhibitors living within a radius of twelve miles, a Cup of the value of 5 guineas went to Messrs. Cass BROTHERS, Cardiff; Mr. R. A. BOWEN coming 2nd.

The special prize for twelve Japanese, distinct, introduced in 1896 and later, shown by those who have not taken a prize for Chrysanthemums at Cardiff, was taken by Mr. H. A. ALLEN, Mr. J. GUNN coming next in order of merit.

Non-competing exhibits were those of Mr. W. TRESEDER, who had Roses and Cactus Dahlias; and of Messrs. CLEVER, of Manchester, who had miscellaneous cut blooms and fruit.

There were, in addition to the "Mums," fruits in collection, vegetables, &c., in competition, and cottagers' exhibits.

SWANSEA CHRYSANTHEMUM.

NOVEMBER 4, 5.—The sixth annual exhibition of Chrysanthemums, Fruit, &c., organised by a Committee of the Working Men's Institute, took place on the above dates, and was without doubt the finest and most successful ever held in Swansea. Since the last show, the Society has become affiliated with the National Chrysanthemum Society, and this year offered a Silver Medal for best group, and Certificates for best specimen plants.

In the open class of twenty-four Chrysanthemum blooms, incurred, 1st honours were taken by Mrs. TURBERVILLE, Hendrywillan House (gr., Mr. Hawkins); closely followed by the Earl of LISBURN, Crosswood Park, Aberystwith (gr., Mr. R. C. Williams).

In the twenty-four Japanese, Mrs. LLEWELYN, Raglan Hall (gr., Mr. Gilbert), was 1st.

The best collection of twelve Japanese was from Mrs. LLEWELYN; Mrs. TURBERVILLE was 2nd.

For a group of Chrysanthemums, the 1st prize and a Silver Medal of the National Chrysanthemum Society was won by JOHN DYER, Esq. (gr., Mr. Gill); 2nd, Mr. J. C. GOEVEIS.

The prize for the Champion bloom of the show was secured by Mrs. TURBERVILLE, with a grand bloom of Australian Gold.

NORTH OF SCOTLAND AUTUMN ROOT SHOW.

NOVEMBER 6.—The annual show was held at Inverurie, N.B. There was a splendid display of the various kinds of Turnips, and the principal features in this section was the closeness of the competition, and the uniformity of the exhibits, rather than the excellence of a few leading entries. The most successful competitors in the classes for Field Turnips were, Mr. WILLIAM YOOL, Glenlogie (green-top Swedes); Mr. WILLIAM SMITH, Corliestone (purple-top Swedes); Mr. WILLIAM LAWSON, Soot-mill (green-top yellows); and Mr. JAS. MURRAY, Fauchalds (purple-top yellows); while Sir GEORGE MACPHERSON GRANT, Bart., of Ballindalloch, was 1st for a collection of twenty-four Turnips, open to the larger cultivators.

Mr. GARDINER, Kenney, was 1st and 2nd for round white Potatoes, with tubers of excellent quality, shape, and colour of the Standard and Jeannie Deans varieties; and in the round coloured class, Mr. J. OGSTON, Bourtie, showed the two leading dishes which were much admired.

The white section was monopolised by the Snowdrop, and the leading dish belonging to Mr. G. PATTERSON, which was a feature of the show, carried off the special prize, for the second year in succession.

Mr. GARDINER was awarded 1st honours for long coloured varieties with a good sample of the Prizetaker, the other chief varieties being the Reading Ruby and Bountiful. This gentleman also won the prize for the best collection of forty-eight Potatoes, in which he showed some of the finest specimens ever shown at Inverurie.

In the "any other variety" class, Mr. GARDINER was 1st with Up-to-Date Potatoes (Mr. Findlay's), and it is worth mentioning that the first three prizes all fell to the same variety. Mr. MILNE, Cluny Castle, secured the 1st prize for breadmaker, a round white variety of good appearance, and unlike the old Victoria Potato.

A special prize was awarded by Messrs. BURTON & SONS, leading, for the best four dishes of specified varieties. Mr. OOSTON, Bourtie, took leading honours with a most meritorious entry, comprising Satisfaction, Reading Russet, Sutton's Seedling, and Windsor Castle. There was a splendid display of field-grown Potatoes.

For collections of thirty-six Potatoes, Mr. GERRARD, Upper Agilston, secured for the fifth time in succession 1st honours with a grand exhibit.

Fruit and Vegetables.—There was an interesting display of fruit, although some of the classes were not so large as they have been generally seen at Inverurie.

It would have been difficult to surpass the show of vegetables, which were exceptionally fine, some of the entries by Mr. J. OOSTON, Bourtie, being highly commended.

ISLE OF WIGHT.

NOVEMBER 9, 10.—The Ventnor Chrysanthemum Society held their second annual exhibition on the above dates. The principal prize-winners were Mr. W. H. Jobling, gr. to Lady LARPUA-CRAW, for cut blooms in the open classes; Mr. F. FORD, Steep-Hill Castle, for groups; Mr. W. W. SHEATH, or black and white Grapes; Mr. W. GER, for specimen-jams; Mr. DAY, for Apples; Mr. W. SHEATH, for Pears; Mr. H. DROVER, for Primulas; and Mr. G. WHITTY, for vegetables. Messrs. H. DROVER & SON staged fruits, flowers, and plants, for exhibition only. Messrs. J. CHEAL & SONS, Hawley, also staged a non-competitive exhibition of Apples.

BIRMINGHAM CHRYSANTHEMUM.

NOVEMBER 9, 10.—Birmingham is to be congratulated upon the very successful exhibition opened on the 9th inst. at Regley Hall. Competition is always very keen at Birmingham, and this year was certainly no exception to the rule. The exhibition still retains its reputation for trained plants, and some of the specimens that were exhibited were very fine indeed, especially varieties with incurved ovaries. Among trained Japanese, the varieties W. H. Lincoln and Vivand Morel were conspicuous.

The cut bloom classes were contested more keenly than the jams, especially in the cases of twenty-four incurved and twenty-four Japanese, the latter bringing sixteen collections (fine merit). Primulas, Cyclamens, floral and table decorations, fruit and vegetables, were shown in praiseworthy condition, in considerable quantity; and the non-competitive stands were tastefully arranged.

GROUPS AND PLANTS.

For the best group of Chrysanthemums and foliage plants arranged in a space of 16 feet in diameter, there were seven competitors. Owing to the small space it was perhaps unavoidable that the arrangements were a trifle stiff, but the majority of the exhibits were good, and the blooms fine.

The 1st prize including the society's Victorian Jubilee Gold Medal was won by Mrs. WHITFIELD, of Moseley (gr., W. Thomson); Mr. R. CADSBURY, Moseley (gr., Mr. G. Mannes), was a capital 2nd.

For a smaller group of similar character, Mr. T. CLAYTON, in Scar, and Mrs. ARMFIELD were the principal winners.

For nine large-flowering specimen plants of incurved varieties, Lady MARTINEAU, of Edgbaston (gr., Mr. O. Mongin) was 1st, with some grand specimens, probably the best that have been staged at Birmingham, the winning collection consisting of Baron Hirsch, Golden Empress, Lord Alcester, Queen of England, Prince Alfred, Lord Wolseley, John Lambert, Jardin des Plantes, and Empress of India; the 2nd honours were secured by J. A. KENRICK, Esq.

Lady MARTINEAU again secured 1st place for six trained specimens of incurved; Mr. J. CADSBURY was a good 2nd.

Lady MARTINEAU's excellent collection of six plants of Japanese exhibited the varieties Chas. Davis, W. H. Lincoln, Vivand Morel (very fine), Florence Davis, Wm. Seward, and Col. W. B. Smith.

In the class for twelve Chinese Primulas, single varieties, Mr. THOMSON was 1st, and Mr. POPE 2nd, and this and all similar classes were well contested and good.

For a display of floral arrangements, any design admissible, there were four entries, the winner taking the Birmingham Silver Cup, value £25. Messrs. PERKINS, of Birmingham, were an easy 1st, and the excellent exhibit well deserved the honour.

Mr. CROOK, of Birmingham, also staged a very fine exhibit.

CUT BLOOMS.

For honours in the class for twenty-four incurved varieties there were nine entries, and eventually the 1st prize was awarded to the Earl of HARRINGTON, Elvaston Castle, Derby (gr., Mr. Goodacre). The back row consisted of Duchess of Fife, Miss Violet Foster, John Lambert, Chas. Curtis (fine in form and colour), John Doughty, Queen of England, Globe d'Or, and Mr. John Murray; 2nd row: Mons. Westblane, Mrs. Robinson King, Robert Pettfield, Golden Empress of India, Miss Foster, and Lord Alcester; 3rd row: Miss Tomlin, Geo. Haigh, Mrs. G. Coleman, Joanne d'Arc, Princess of Wales, Madame Darier, Miss Haggas, and D. B.

Crane. Possibly the colours might have shown to better advantage had they been differently disposed. But the quality of the blooms could hardly have been better, and the winner deservedly won the 1st prize of £10 and the Victorian Gold Medal. The 2nd prize was secured by Lady HINDLIP, Warwick (gr., Chas. Crook). In this stand Robt. Pettfield, J. Agate, and Chas. Curtis were staged very finely.

For eighteen blooms of incurved, five competitors engaged, and the 1st prize was won by the Dowager Lady HINDLIP, Warwick (gr., Chas. Crook). The competition in this class was very keen; in the winning stand good blooms were staged of Major Bonaffon, Queen of England, J. Agate, Empress of India, Lord Alcester, Miss Haggas, and others. W. ROBERT, Esq., Standbridge (gr., J. Parkes), won 2nd honours; in this stand a very fine bloom of Duchess of Fife was noticed.

The best collection of twenty-four blooms of Japanese from sixteen entries, was staged by Mr. GLEASON of Stanmore, who, after a very keen fight, was awarded the 1st prize. He had a marvellous collection of blooms in point of size, colour, and fresh appearance. His back row consisted of Mme. Carnot, Duke of York, A. H. Wood, Chas. Davis (very fine), M. Pankoucke, Australis, Eva Knowles, and Simplicity; 2nd row: International, Australian Gold, Mr. Geo. Palmer, Etoile de Lyon (one of the finest blooms that was staged of this variety), Mutual Friend, M. Chamon de Leché, Phœbus, and Vivand Morel; 3rd row: Modestum (a very good yellow), Viscountess Hambledon (an extraordinary bloom of this variety), Sunstone, Mr. H. Payne, Oceana, J. Bidecove, Edith Tabor, and Mr. G. J. Hill. Mr. MEASE, Leatherhead, took 2nd place in this competition, and he had yellow Madame Carnot, A. H. Wood, Simplicity, and Mrs. W. H. Lees in extra good character. There were three other prizes in this class.

For eighteen blooms of Japanese, Mrs. SMITH RYLANDS (gr., R. Jones), was 1st, with International, Thomas Wilkins, Simplicity, Lady Hanham, General Roberts, Mrs. W. H. Lees, Mrs. Smith Rylands, Silver King, M. Pankoucke, J. Seward, J. Bidecove, M. Gustave Henry, C. H. Payne, Mrs. S. Servis, Dorothy Seward, Edith Tabor, and Mutual Friend. The 2nd place was filled by Mr. FOSTER, Havant, who staged that very fine white variety, Mrs. J. Lewis, and in this stand there were some good blooms of Mrs. H. Long and Mr. Chas. Bluck.

For six blooms of one variety white Japanese, Mrs. SMITH RYLANDS was again 1st with good blooms of Thérèse Rey.

In the class for twelve specimen blooms, arranged on long stems with Ferns, Palms, and other foliage artistically displayed, Mr. F. DAVIS was placed 1st, and Right Hon. JOSEPH CHAMBERLAIN 2nd. Mr. DAVIS also took 1st prize for a collection of six blooms of a yellow-flowered Japanese.

The best collection of twelve Anemone flowers were from Mrs. SMITH RYLANDS with some good blooms of Sir Walter Raleigh, John Benjamin Webster, Lady Benedict, and Descartes.

FRUIT.

In the class for a collection of British-grown fruit, Mr. GOODACRE was a good 1st, and took the Gardeners of Birmingham Victorian Diamond Jubilee Silver Cup, value £15. In Mr. Goodacre's collection was a background of Grapes, black and white, fine in berry and colour; and in front Pines, Melons, Apples, Pears, &c., the whole occupying a space of 50 square feet. The exhibit was of an all-round good quality, and well fitted to illustrate the beauty of well-grown British produce; Messrs. GEO. BUNYARD & CO, Maidstone, were 2nd with a nice even collection, but evidently many points behind Mr. Goodacre.

Grapes were shown in quantity, and the principal prize-winners were Mr. H. F. HAYWARD, Mr. GOODACRE, Lord Powis, Earl of DENBIGH, and Lord BACOT.

The local classes for Grapes, and Apples and Pears, brought forward some specimens of fruit, good in size, shape, and colour.

VEGETABLES.

The vegetables exhibited were marvellous in quantity and quality, and better than have been shown at Birmingham previously. Liberal prizes were offered by Messrs. THOMSON & SONS, Messrs. POPP & SONS, Messrs. SUTTON & SONS, Messrs. WEBB & SONS, Messrs. SIMPSON & SON, and Mr. ROBERT SYDENHAM. The principal prize-winners were Lord CANARVON, Lady THEODORA GUEST, the Dowager Lady HINDLIP, Right Hon. JOSEPH CHAMBERLAIN, and several others, more or less local.

NON-COMPETITIVE EXHIBITS.

A great many firms sent exhibits not for competition, amongst whom may be mentioned, Messrs. CUTBUSH & CO. Highgate, who had Begonia Gloire de Lorraine, Adiantum Farleyense, and Palms; Mr. STEVENS, Birmingham Arcade, staged a collection of floral designs and dried foreign grasses, very bright, but rather artificial in appearance; Messrs. WEBB & SONS, Stourbridge, had well grown Onions, &c.; M. J. MORT, Esq., staged a collection of fruits; and Mr. W. B. ROW, Barbary Nurseries, Worcester, had a stand of cut flowers and fruit: The Right Hon. JOSEPH CHAMBERLAIN staged a collection of Chrysanthemums shown with their natural foliage, a very striking exhibit; a collection of Cacti from Mr. J. A. WALTON, of Handsworth, which attracted a deal of attention; Messrs. THOMSON staged a beautiful lot of Primulas; Mr. WELLS, of Earlwood Nurseries, sent a box of thirty six Japanese Chrysanthemums, which were much admired; and Messrs. H. CANNELL & SONS, of Swanley, staged a collection of vegetables to illustrate the field culture.

One of the best honorary exhibits was a collection of vegetables that was staged by Mr. EMPSON, 1st to Mrs.

WINGFIELD, of Amphilhill, Boda. The Carrots, Leeks, Cauliflowers, &c., were greatly admired, and some very complimentary remarks were made to Mr. EMPSON respecting this exhibit.

The duties of judging were undertaken by Mr. OWEN THOMAS, Mr. A. F. BARRON, Mr. W. KIPPE, Mr. PARKES, Mr. DOWNES, and Mr. A. COOMES; and much praise cannot be given to Mr. HUGHES, secretary, and a colleague for the energy and diligence that resulted in so fine a show.

LEEDS PAXTON.

NOVEMBER 9, 10.—The ninth annual Chrysanthemum exhibition of this Society was held in the Town Hall. The exhibition may be placed in the front rank amongst the Chrysanthemum shows of the North of England. The entries were more numerous than on any previous occasion, being between 500 and 600. The quality of the exhibits was better than formerly, especially that of the Chrysanthemum groups, and the cut blooms in the local classes.

The specimen and foliage plants were tastefully arranged on the orchestra, and the Chrysanthemum groups on one side of the hall. Miscellaneous groups occupied the other side, and the cut flowers, table plants, and fruit were staged on tables running across the hall. The bouquets, sprays, and button-holes were arranged on tables in front of the orchestra, on each side of an artistic design of fruit, flowers, and autumn-tinted leaves, arranged by Mr. GRIZ, gr. to Sir J. KIRSON, Bart., and Mr. A. WALKER of Messrs. SHAW BROS., florists, Leeds, and frozen in a large block of ice by Mr. THOMSON, of the Leeds Ice Storage Co.

In the groups of Chrysanthemums, the addition of six foliage plants and Ferns relieved the effect considerably. The 1st prize was justly awarded to Mrs. BOWRING, Allerton Hall, Gledhow, Leeds (gr., Mr. W. Moore); J. RHODES, Esq., Potternewton House, Leeds (gr., Mr. R. Mason), was 2nd with a well-arranged group, but the plants were of less good quality.

The miscellaneous groups in the local class showed good culture, but the arrangement might have been freer. The 1st prize group was much the best, and was exhibited by M. KITCHEN, Esq., Elles Close, Roundhay (gr., Mr. Ganble).

In the open class for miscellaneous groups there was only one exhibitor, E. B. FABER, Esq., J.P., Belvedere, Harrogate (gr., Mr. Townsend), who set up a magnificent group.

CUT BLOOMS.

In the open class for twenty-four Japanese blooms, Mr. R. A. BOWRING, The Heath, Cardiff, took 1st honours with most magnificent blooms. The following varieties were remarkable: Simplicity, a superb bloom, which gained the special prize for the best Japanese in the exhibition; Etoile de Lyon, Chas. Davis, Vivand Morel, John Seward, Duke of York, Phœbus, Australian Gold, W. Seward, Miss Teichmann, and Mrs. W. Weeks. A. WILSON, Esq., Tranby Croft (gr., Mr. Leadbetter), was 2nd with a good stand.

In the open class for eighteen incurveds, the Rt. Hon. the Earl of HARRINGTON (gr., Mr. Goodacre), exhibited a splendid collection, with which he won the society's Challenge Cup. Having won the Cup in this class for the second time in succession, the Cup now becomes Mr. Goodacre's own property. A. WILSON, Esq., again showed well for 2nd place.

In the open class for twelve blooms, distinct, A. WILSON, Esq., was 1st; Mrs. WHITAKER, Cliff House, Hemble, near Hull, 2nd.

In the local classes for cut blooms there was noticeable marked improvement, and some of them would have scored well in the open classes, especially the twelve incurved, and the twelve Japanese, distinct, exhibited by Mrs. BOWRING's gr., Mr. Moore, with which he won the two Challenge Cups. The Cup offered in the incurved class becomes Mr. Moore's property. Sir J. KIRSON was a good 2nd in both classes.

There was a fine display of bouquets, sprays, and button-holes. Vegetables were extensively shown, but the exhibits of fruit were not so numerous, nor were they of such good quality as formerly.

The judges were Mr. JELLOCO, Liverpool; Mr. WILSON, Swanland Manor, Hull; Mr. FOLKARD, Sand Hutton Hall, York; and Mr. DANIELS, Dewsbury.

KINGSTON-ON-THAMES CHRYSANTHEMUM.

NOVEMBER 9, 10.—Held as usual in the large Drill Hall, the show was of fair quality, but still seems shorn of some of its older features, groups being reduced to one class, and the large trained plants having disappeared. The group now is of a composite nature, Chrysanthemum plants, foliage and other flowering plants being combined. The effects obtained are varied, and in no case were they as good as they might have been.

Mr. PONTBURY, Ripon House Gardens, Putney, was 1st, his Chrysanthemums being aided by Eucharis, Bouvardias, Palms, &c. Mr. D. GIBSON, gr. to J. B. JOHNSTONE, Esq., Kingston Hill, was 2nd, having two-thirds Chrysanthemums, but rather stiffly group d.

For four natural bush Japanese Chrysanthemum plants, Mr. MILHAM, gr. to A. F. MILLER, Esq., Leatherhead, was 1st, his specimens, some 3 feet in height, being finely bloomed. They comprised Vivand Morel, Mons. henon de Leché, Col. W. B. Smith, and Charles Davis. Mr. PRING-

THORPE was 2nd with a single specimen. The latter was a good 1st, having a fine Boule d'Or.

Berried plants were capital, with six neat 2-feet, very handsome, pyramidal scarlet-fruited Capsicums. Mr. J. Lox, gr. to T. W. DISNEY, Esq., Kingston, was 1st; Mr. Watkins, gr. to R. W. MONRO, Esq., Coombe Warren, was 2nd.

Mr. S. Pead, gr. to R. S. BOND, Esq., Surbiton, had the best six Bouvardias; and Mr. F. King, gr. to A. F. PERKINS, Esq., Holmwood, Dorking, the best nine table plants; Mr. MILEHAM having the best six plants, and also the best six double Primulas, capitally bloomed. These are always well done in the Leatherhead district.

Cut Flowers.—The Challenge Vase class for twenty four Japanese and twenty four incurved flowers brought five competitors, the winner this time being Mr. F. KING, who takes the Vase to Holmwood for the year. He had of Japanese, *Australe* (the champion bloom of the show), *M. Chenon de Lechê*, Mrs. J. Lewis, *Modestum*, Mdle. Thérèse Rey, *Phœbus*, Edwin Molyneux, Viscountess Hambledon, Edith Tabor, Vivian Morel, Mrs. A. J. Hubbuck, *Australian Gold*, *Simplicity*, Madame Carnot, *Pride of Exmouth*, *Mutual Friend*, *M. Maurice Ricoud*, and others; and of incurved *Duchess of Fife*, Charles Curtis (the premier bloom), W. Tunnington, Lord Alcester, Bonnie Dundee, Robert Pettfield, Major Bonnafon, C. B. Whitnall, Lord Rosebery, Brookleigh Gem, with others. Mr. G. Hunt, gr. to PANTIA RALLI, Esq., Ashstead Park, was 2nd this year, having been last year's winner. His Japanese were very good, but his incurveds were rather weak. Mr. Jinks, gr. to EDOAR BRUCE, Esq., Walton-on-Thames, was 3rd, having the second best champion Japanese bloom in his stand, a fine golden *Madame Carnot*.

With thirty-six Japanese, Mr. W. Higgs, gr. to J. B. HANKEY, Esq., Leatherhead, was 1st, the blooms being of rather moderate quality. The best were *Madame Carnot*, Mdle. Gustave Henry, Vivian Morel, A. H. Wood, Mrs. H. Weeks, *Australe*, *Hairy Wonder*, *M. Pankoucke*, *M. de la Rocheterre*, &c. Mr. HUNT was a very close 2nd. Throughout this class many blooms had suffered from damp.

Mr. D. GIBSON had the best twelve Japanese in one class, Mr. SPRINGTHORPE being 2nd.

In a further class for twelve blooms, Mr. GIBSON was again 1st, and Mr. SPRINGTHORPE 2nd; Mr. H. SQUELCH, of Dorking, coming 3rd.

In the class for six white Japanese blooms, Mr. G. W. FORBES, gr. to Madame NICHOLS, Surbiton, had grand ones of *Madame Carnot*, coming an easy 1st; Mr. PEAD being 2nd with the same variety. In a further class for six, any colour, Mr. FORBES was again 1st, with good Vivian Morel; Mr. GIBSON being 2nd, with the yellow *Phœbus*; and in a third class for six blooms Mr. HIGGS was 1st with rather weak *Madame Carnot*; Mr. SPRINGTHORPE having really better blooms of *Phœbus* for the same place.

Incurved flowers now play a small part in these shows. In the class for twenty four blooms, Mr. F. KING was 1st, with fair specimens, *Globe d'Or*, Lord Rosebery, C. B. Whitnall, Robert Pettfield, Brookleigh Gem, Mrs. R. King, Chas. Curtis, and *Ma Perfection* being of the best; Mr. G. HUNT was 2nd, and Mr. HIGGS 3rd.

Mr. J. French, gr. to Mrs. BARCLAY, Wimbledon, had the best twelve blooms, Mr. SPRINGTHORPE being 2nd.

With six of one variety, Mr. G. HUNT was well 1st, with very fine *Duchess of Fife*, good C. H. Curtis coming 2nd from Mr. F. KING.

Reflexed blooms were small, Mr. C. J. Cooke, gr. to J. S. SASSOON, Esq., Walton, being 1st, and Mr. PEAD 2nd. Mr. JINKS had the best twelve *Anemones*, really good blooms. Mr. F. CARYER, gr. to A. G. MEISSNER, Esq., Weybridge, had the best twelve trebles of *Pompons*, and Mr. A. NAGLE, Kingston, the best *Anemone Pompon*. With six blooms each of Mrs. G. Rundle, Mr. Glenny, and Mrs. Dixon, Mr. FORBES was well 1st, as he was also for twelve singles in trebles, a beautiful lot of flowers.

A class for twelve Japanese blooms on long stems, set up in baskets, brought a capital competition. The 1st prize was given to Mr. G. ELLIOTT, gr. to Captain MACDONALD, West Molesey, for a broad, flat basket, the blooms well disposed, being mixed with foliage plants and grasses; Mr. BRETT, gr. to WM. CAMPBELL, Esq., Coombe Bridge, coming 2nd.

Fruit.—The collections of four dishes were very poor, the 1st prize lot from Mr. W. Taylor, gr. to C. BAYER, Esq., Forest Hill. With Black Grapes in three bunches, Mr. TAYLOR was 1st, having good Gros Colman; Mr. G. SMITH coming 2nd with the same variety; and Mr. TURNER was 3rd with *Alnwick Seedling*.

Mr. J. BURY, Byfleet, had some capital Alicantes that, on the second day in better light showed a long way better than the 3rd prize bunches. Some adverse criticisms were passed on the judging of the Grapes.

Mr. ATKINS had the best six dishes of Apples in Ribston, Blenheim, and King Pippins, *Mère de Ménéage*, Lady Henriker, and Wellington; Mr. TURNER coming 2nd. Mr. HICKS had the best four varieties of Pears, moderate samples.

Mr. C. J. Waite, gr. to Mr. PATRICK TALBOT, Esher, sent a large basket of twelve diverse vegetables not for competition.

There were numerous bouquets, table stands, sprays, buttonholes, and similar decorations set up by Lady-amateurs, but these have only local interest.

GREAT BERKHAMSTED SHOW.

NOVEMBER 9, 10.—The Chrysanthemum Society of this place held its tenth annual show on the above dates.

There were twelve more entries than last year, viz., 145, and in all classes advancement was obvious, except in that of Grapes. Chrysanthemums were well shown by Mrs.

SMITH DORRIEN, Earl BROWNSLOW, Lady CHESHAM, Mr. T. GOOCH, Mr. E. F. FIDDERDALE, Mr. W. GILLMAN, Mr. STRACHAN, and others in the bigger classes; Mrs. LIONEL LUCAS, Mr. J. LA FONTAINE, Mr. GRISTWOOD, and Mr. CLARE in the minor ones. As a speaker remarked at the dinner, the show once was filled with quantity, now it was filled with quality, and there was scarcely a weak class.

DEVON AND EXETER GARDENERS'.

NOVEMBER 10.—The subject treated of on the occasion was "Pruning and the Management of Fruit Trees," a paper by Mr. T. H. SLADE, gr. to Lord POLTMOORE, at Poltmoore Park.

It was important in planting Apple trees, said the lecturer, to bear in mind the kind of stock Apples were grafted on, as if on *Paradise*, 8 to 12 feet apart would be sufficiently wide, but 12 to 20 feet was necessary for Apples on the Crab stock. Where space was limited, the *Paradise* stock should be preferred.

When the soil was very good, he recommended planting near the surface; and in pruning the roots, he advised pruning them so as to induce the new roots to strike upwards, and thus get the benefit of the sun's action on the soil.

Fears that the roots of Apple trees might be injured by frost were groundless. Where a tree continued to make about 9 inches of good solid growth annually, it was not in need of root pruning; but when this treatment was necessary owing to excessive growth of wood, there should be a fair balance aimed at between the ramifications of the roots, and the spread of the top branches.

Orchard Apple trees which were planted 30 feet apart, required little, if any, root pruning, as they would in time reach a bearing condition, and that alone would check any tendency to make wood at the expense of bloom.

Where orchard trees were planted in the autumn, pruning should be practiced in the spring. An orchard standard tree should have a stout, clean stem, and about six main shoots. It was easy to multiply the shoots by shortening existing ones to 3 or 4 inches, and it was a mistake to give the tree too much work to do, by allowing shoots to remain at their full length during the early years of the life of a tree.

With regard to Pear trees, the crowns should be kept thin, and only some of the branches pruned back. In pruning Pear trees some recommended pruning the top first, and then, at an interval of a week or a fortnight, the lower part of the tree, but he did not think this was necessary.

In pruning espaliers, the leaders or principal shoots should be left unshortened in order to induce the formation of fruit-buds in a natural manner. The greatest care should be taken, in choosing trees, on the right kind of stock. He had seen Pears grafted on Thorns, but, of course, such trees were worthless. As to summer pinching, the grower must be guided by the season, but, in any case, it was well to leave it as late as possible in the summer.

If Cherries made too much wood, a salutary check would be administered by mixing rubble with the soil. As to the blistering of the leaves of Peaches, he thought it was caused by cold winds in spring, and not, as some supposed, through dryness at the roots. Mildew and other pests should be sharply looked after, and taken in hand in time. He strongly advocated the autumn grease-band remedy for fruit-trees, prevention being infinitely preferable to cure in this case. Mr. SLADE illustrated his lecture by placing several fruit-trees before his audience, and pointing out the results of bad grafting, and the effects of different kinds of treatment. With the usual vote of thanks, after a rather spirited discussion, the meeting terminated.

MONMOUTH CHRYSANTHEMUM.

NOVEMBER 10, 11.—After a lapse of six years, this Society held a show with very satisfactory results in the Rolls Hall, Monmouth, on the above dates.

Cut Blooms.—There were seven exhibitors in the class for twenty-four Japanese, and the 1st prize was taken by Mr. LOCKYER, gr. to J. C. HASBURY, Esq., Pontypool Park, with wonderful blooms of *Amiral Avellan*, Duke of York, Mrs. C. Bick, *Madame de Molin*, *M. Chenon de Lechê*, *Edwin Molyneux*, &c.; Mr. DAVIS, gr. to A. W. S. WRIGHT, Esq., Quarry House, Linton, who was a close 2nd, had *Australian Gold*, *Oceana*, Edith Tabor, *sunflower*, *Madame Carnot*, *Simplicity*, &c., in grand form.

In the class for twelve Japanese, Mr. BYFORD, gr. to C. LEE CAMPBELL, Esq., Glewston Court, Ross, was an easy 1st, with superb blooms of *M. Chenon de Lechê*, *Phœbus*, *International*, *Pride of Malford*, *Elsie Teichmann*, Mdle. de M. Gilbert, *M. Gruyer*, &c.; 2nd, Captain HOGWOOD, Mount Craig.

Here again Mr. LOCKYER had the post of honour for twenty-four incurveds, the blooms large and well finished, of *Miss Haggas*, C. Curtis, *Empress of India*, *Duchess of Fife*, *Madame Darier*, &c.; 2nd, Mr. PITT, Abergeenny, who also had a good stand, including a magnificent bloom of C. Curtis.

A. KNOWLES, Esq., Newent Court, Gloucester, who was placed 1st for twelve incurveds, had well-finished flowers of *Major Bonnafon*, *J. Agate*, &c.; Mr. BYFORD being a good 2nd.

Groups of Chrysanthemums.—In point of merit, the groups were not the equal of the stands of cut blooms, although the best of them, one arranged by Mr. Phillips, gr. to J. M. BANNERMAN, Esq., Wyatstone Leys, was particularly good; C. M. CROMPTON ROBERTS, Esq., Drybridge, Monmouth, followed closely with plants having better flowers, but less satisfactorily arranged.

Wreaths, bouquets, Apples, Pears, and vegetable exhibited in excellent examples; while not the least fine features were some non-competitive exhibits, a large collection of Apples from Mr. BASHAM, Pa Nursery, Newport, similar to that he staged at Hereford week; and a large group of plants from Lord LLEWELLYN, which consisted of *Eucharis grandifolia*, *Cypripediums*, *Chrysanthemums*, *Palms*, *Ferns*, &c.

NORTHAMPTON CHRYSANTHEMUM.

NOVEMBER 10, 11.—This successful Society held its sixth annual exhibition in the Corn Exchange, and play was a better one than the Society had previously. The groups contained better blooms than in former years. Primulas are always good at this show, and effort made this season to win the prize from the champion grower of the last two years, but without success. Bateman, gr. to R. LEE BEVAN, Esq., Brixworth Hall, again 1st, although some of his competitors staged the variety.

Cut blooms of Chrysanthemums were very good in the show. We remarked two blooms of Mrs. J. Lewis and *Sin* that were better than we have previously seen these ties. A strong spirit of rivalry exists between the amateurs of the Northampton district, and some of the blooms by them this year would have been creditable to the classes.

GROUPS AND PLANTS.

For the best group of Chrysanthemum plants the three competitors, and the winner was found in Mr. GRAY, gr. to Mrs. COULSON, Cliftonville, Northampton, arrangement of well cultivated plants was very stylish. Mr. SODEN, gr. to Mr. F. G. ADAMS, Northampton, was 2nd with a fairly good group.

For six Japanese, distinct varieties, Mr. REEVE was placed 1st, amongst them being a very well grown *Phœbus*, Vivian Morel, and also Wm. Tricker; Mr. SODEN was 2nd.

In the amateurs' classes for groups, Mr. BARRAWAY, Thrift Street, was 1st, with a splendid group.

CUT BLOOMS.

For eighteen incurved varieties, Lord SPENCER, Park, was a good 1st out of five entries, having some fine blooms of C. B. Curtis, John Lambert, Ma Perfection, W. Tunnington, and Major Monmouth. Mr. COPEMAN with good *Baron Hirsch* and Duke of Fife, the last bloom was not quite developed.

Mr. REEVE took the premier honour for twelve incurveds having very fine blooms of *J. Agate* and *Empress of India*.

In the class for eighteen Japanese (distinct, from entries. Mr. PEARCE was placed 1st, who had good blooms of Mrs. J. Lewis, Vivian Morel, and *Simplicity*.

For twelve Japanese, introduced since 1833, Mr. I was again 1st with fine specimens of Mrs. J. Lewis, Gruyer, *Phœbus*, *Madame Carnot*, *International*, *Sin*, Chas. Davis, and G. Hubbuck, *Pride of Exmouth* (a bloom), Lady Ridgway, and *Australian Gold*. Mr. COPEMAN was a very fine Mrs. J. Lewis in the stand.

For six Japanese introduced in the spring of 1894 and 1895, Mr. COPEMAN was 1st with six beautiful blooms of *J. Lewis*, *Australian Gold*, *Miss Goschen*, *Lady Byron*, *A. de Rothschild*, and C. W. Richardson.

The rest of the cut bloom classes were well contested.

MISCELLANEOUS.

Mr. WOODS was 1st in table decoration; and for table Mr. HAYES secured the principal honour. Mr. HAYES also 1st for bouquet and wreath.

Fruit and vegetables were well shown, Mr. COLE, gr. to SPENCER, being 1st for vegetables; and Mr. BATES for Grapes.

Two very pretty stands of miscellaneous fruits and were shown by Messrs. JOHN PERKINS & SONS; also TIOS PERKINS & SONS, both of Northampton.

The judging was undertaken by Mr. W. DROVER, of Ham, Hants; Mr. G. Glover, Esher; Mr. F. P. Northampton; and Mr. Collins, Berry Wood.

CHELTEMHAM, &c., WINTER FLOWERS EXHIBITION.

NOVEMBER 10, 11.—At this annual exhibition which has been continued for a period of twenty-seven years, the farmer and the gardener join hands; the former stage of various kinds of ponderous proportions, and even Cow-cabbages, with grain of various kinds; and the latter supplies Chrysanthemums, fruit, and vegetables. The of the assembly rooms is given up to the gardeners, he has to put his vegetables in another for lack of space, while other rooms have farm produce in great quantities. It is an exhibition somewhat unique of its kind, and the Mayor of the town occupies the chair at a luncheon the awards are made.

Chrysanthemums.—There were several classes for most of them trained specimens, but with few exceptions they were wanting in foliage. Messrs. SMITH & SON, George's Road, had the six best incurved specimens.

JAMES PILGRIM, Pitville Nursery, the best six Japanese. In the class for a group of plants, a remarkably fine was made by Mr. G. W. Marsh, gr. to T. B. BUTT, Esq., Court. Every plant was characterised by fine growth.

carried splendid blooms. Mr. W. Lusty, gr. to Colonel Rogers, Battledown Court, was a good 2nd, having fine blooms.

Some excellent cut blooms were staged, and there was a close competition in most of the classes. The best eighteen varieties of incurved Chrysanthemums came from Mr. G. W. Marsh; Mr. W. Lusty was a very close 2nd indeed. The blooms in the latter had size and evenness, and those in the former rather more refinement.

Mr. Lusty was an easy 1st with eighteen blooms of fine character; Mr. W. Hillier, gr. to Lady Northwick, was 2nd.

With twelve incurved, Mr. W. Child, gr. to the Earl of Coventry, Severn Stoke, was 1st, having in excellent character Mrs. J. Kearns, C. H. Curtis, and Jeanne d'Arc; Mr. J. Mullins, gr. to Col. Arbuthnot, Gloucester, was 2nd.

Japanese Chrysanthemums were finely shown; the best thirty-six blooms, which were well ahead of anything else, came from Mr. J. Martin, gr. to T. W. Swinburne, Esq., Corndean Hall, who had very fine blooms of Madame Carnot, Phœbus, Edith Tabor, A. G. Hubbuck, Hairy Wonder, Beauty of Teignmouth, Mrs. R. Jones, Ethel Addison, and Robert Owen; Mr. G. W. Marsh was a good 2nd.

Mr. W. Hillier was 1st with eighteen blooms, showing some very good ones; Mr. Marsh was 2nd.

With twelve blooms, Mr. J. L. Burgess was 1st; and with six blooms, Mr. J. Maddocks, gr. to J. Harlick, Esq., Cowley Manor.

Button-holes, sprays, bouquets, and vases of Chrysanthemum blooms were shown in several classes.

Table plants, Cyclamens, Mignonette, and Chinese Primroses were also shown.

Fruit and Vegetables.—Culinary and dessert Apples were in fine character, and brilliantly coloured. The best collection of twelve dishes of culinary, which included well-known sorts, came from Mr. A. James, gr. to Viscount Deerehurst. Mr. J. Mullins had the best four dishes.

The best twelve dishes of dessert Apples came from Mr. A. James, a very good selection; Mr. Child was again 2nd.

The 1st prize for four dishes of dessert Apples, distinct, was won by Mr. G. Cliff. Single dishes of culinary and dessert Apples were also shown. Mr. A. James also took the 1st prize with 12 dishes of Pears, showing good fruits.

Mr. A. James had the best two bunches of Black Grapes, showing well finished Alicante; and he was also first with White Grapes, having well-coloured Muscat of Alexandria.

Vegetables were in good character generally. Mr. Alfred Cook had the best eight dishes; Mr. Child took Messrs. Sutton & Sons' 1st prize for six varieties; Mr. Alfred Cook was 1st with six dishes, the prize offered by Messrs. G. F. W. Yates. The arrangements were excellent in the hands of Mr. S. Sharpe, the Hon. Secretary.

DONCASTER CHRYSANTHEMUM.

NOVEMBER 10, 11.—The principal features at this charming show were the superb groups, and the general arrangements reflected great credit on the powers that be.

Mr. Alderman gained the special prize for the premier bloom in the show, and the same gentleman was 1st for twelve Japanese, twelve incurved (nine distinct), and twelve incurved (eight distinct). Mr. Keywood, gr. to W. H. B. Wrightson, Esq., Cusworth Hall, showed superb blooms of Madame Darier, Jeanne d'Arc, and Golden Empress, in his 3rd prize board in the class for nine distinct blooms.

There were but three competitors in the class for a group arranged for effect, Mr. H. Butcher, gr. to W. Chadwick, Esq., Arksey Hall, being 1st with some fine blooms that might, however, have been more happily blended in regard to their colours; Mr. Keywood came 2nd.

For miscellaneous groups Mr. Hill, who has but lately taken over the charge of Mr. Morris' gardens at Beechfield, was well 1st.

In the district class, Mr. Butcher was 1st for six incurved blooms dissimilar, closely followed, however, by Mr. West, gr. to Sir Wm. Cooke, Wheatley Park. In the six dissimilar reflex class, Mr. Butcher, Mr. West, and Mr. Keywood, were placed in the order named.

For twelve Japanese (nine dissimilar), Mr. Keywood, C. W. Blagden, Esq., and Mr. West, were respectively placed in the position of their names.

Fruit, &c.—The best white Grapes were shown by Mr. Butcher, whilst Mr. Alderman secured the 1st prize for black Alicante.

Mr. Keywood secured 1st place for cooking Apples, with Warner's King; whilst Mr. Brown, gr. to R. S. Schofield, Esq., was 1st in the dessert class.

Pot plants made a poor show, but everything else was excellent, and reflected great credit on the secretary and committee.

UXBRIDGE AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 10, 11.—This Society held its second annual show of Chrysanthemums, fruit, and vegetables in the Town Hall.

Mr. W. Batchelor, gr. to C. B. Leake, Esq., Harefield Park, was 1st for a group of Chrysanthemums, in which were some fine blooms of Mrs. Weeks, Edith Tabor, Mutual Friend, and Phœbus.

In a class for "single-handed gardeners," Mr. Taylor, gr. to G. Wills, Esq., Dileford Manor, was 1st for a group of Chrysanthemums; and Mr. G. Bull, gr. to A. M. Tarleton, Esq., Breckspers, was 1st for a group of miscellaneous plants. Mr. Daley, gr. to C. M. Wakefield, Esq., had the best specimen plants.

In the open class for twenty-four Japanese blooms, Mr. S. Melbeck was 1st; and for twenty-four incurved blooms, Mr. Watson, gr. to F. Cox, Esq., was the winner.

Most of the remaining classes were reserved to members. There was good competition in the classes for fruit and vegetables.

MAINDEE AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 11.—The eleventh annual show took place in the Gynnasium, Newport, Mon., a spacious hall well adapted for a flower show. The attendance was most encouraging, and the exhibits on the whole were good, the groups being especially fine.

The best group of Chrysanthemums (open) was staged by Mr. G. Stedman, Maindee Nursery, who had a well arranged group with blooms of the finest quality; the best were Edith Tabor, Chas. Davis, Etoile de Lyon, M. Chenon de Leché, and Phœbus.

S. Dean, Esq. (gr. to Mr. B. Giddings), had the best four dwarf-trained Chrysanthemum plants, and the best three pyramidal-trained Chrysanthemum plants.

Col. J. Hanbury, Pontypool Park (gr. to Mr. J. Lockyer), won the 1st prize for twelve Japanese blooms distinct. The following were well staged: Duke of York, Mutual Friend, Mrs. C. Blick, Vanden Heede, and G. C. Schwabe. Col. J. C. Hanbury had also the best collection of six cut blooms incurved.

The best group of Chrysanthemums in the Gardeners' Class was from S. Dean, Esq. (gr. to Mr. B. Giddings). The plants were well foliaged, the blooms were fresh and of good size, the colours being well blended.

The best group of miscellaneous plants was from C. H. Bailey, Esq. (gr. to Mr. Sharpe). This was the finest exhibit in the show, and most tastefully arranged.

Trade Exhibits included one from Mr. William Treseeder, Cardiff, comprising Cactus and single Dahlias, Roses, Chrysanthemums and bouquets.

Mr. John Basham of Fair Oak Nurseries, Bassaleg, Mon., staged an immense collection of Apples.

WINCHESTER.

NOVEMBER 11, 12.—An excellent exhibition in every respect was that held in the Guildhall, Winchester, on the above dates; and Mr. C. Shenton, the hon. secretary of the society, may be heartily congratulated upon the success that has attended his efforts.

In the cut bloom classes Mr. W. G. Adams, 89, Clarendon Road, Southsea, won the premier award for forty eight, half of which were Japanese and half incurved varieties; and especially meritorious were the blooms of the latter. Mr. W. Neville, gr. to F. W. Flight, Esq., Twyfoe d, Winchester, was 2nd, his strength lying in the Japanese section.

Mr. J. Bowerman, gr. to C. Hoare, Esq., Hackwood Park, Basingstoke, took the 1st prize for twenty-four Japanese varieties, the blooms shown being highly coloured, and of a size almost too large to allow of their being properly seen upon the show-board. Mr. P. West, gr. to H. J. Wigram, Esq., Northlands, 8 Salisbury, was 2nd.

In the classes for twelve and for six incurved varieties, Mr. Adams was 1st in each; Mr. Neville being awarded the 2nd place in each. The latter exhibitor was the winner in the twelve flower class for white Japanese in four varieties, with capital blooms of nicely chosen varieties; and Mr. Bowerman secured a similar award for the same number of yellow or bronzy-flowered varieties.

Mr. Best, gr. to F. D. Leyland, Esq., The Vine, Basingstoke, was 1st for twelve blooms of any other colour; but he was very closely followed by Mr. Bowerman.

Groups of Chrysanthemums were shown in the best manner by Mr. Street, gr. to the Rev. Dr. Fearon, Winchester College, with plants and blooms of the finest quality; Mr. G. Newman, gr. to Captain Gausson, Twyford Lodge, Winchester, coming in really good 2nd.

Plants to show for conservatory decoration and specimens were capital, especially those sent by Mr. G. Adams, gr. to Col. F. A. Dickens, Blackbridge; and by Mr. Holloway, gr. to Mr. A. Brown Hill, The Farm Dairy, Southampton, who were awarded 1st, 2nd, and 3rd prizes in the order of their names.

Mr. A. Taylor, 3, Hillside Terrace, Winchester, had the best specimen trained plant in Golden Christine.

Mr. E. Can, gr. to N. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, won the leading award for a group of miscellaneous plants arranged for effect, and in which some Orchids in flower formed a prominent feature. Primulas, Cyclamens, and table plants, fruits, and vegetables were creditably shown.

Mr. E. Molyneux, gr. to W. H. Myers, Esq., M.P., Swanmore Park, Bishop's Waltham, sent a pleasing exhibit of cut Chrysanthemums, consisting of Japanese, incurved, Pompon, and single flowered varieties.

BECCLES CHRYSANTHEMUM AND FLORICULTURAL.

NOVEMBER 11, 12.—The eighth annual show of the above society was held in the Town Hall, Beccles. In the open classes for plants in pots the entries were not so numerous as in previous years, but the falling off in this respect was more than compensated by the excellence of the exhibits.

For three Chrysanthemums in pots, E. Masters, Esq., Beccles, again took premier honours in the classes for Japanese, incurved, reflexed, and Pompon varieties, also

for three standard trained plants. This is the eighth consecutive year Mr. Masters has held this position.

There was a fine display of cut blooms, and the competition was very keen. For twenty-four Japanese Sir R. Beauchamp was awarded the 1st prize for a very even lot; N. Bacon, Esq., Raveningham Hall, was a close 2nd.

The best collection of twelve Japanese was from F. Penn, Esq., Benacre Hall.

There was a fair show of incurved varieties. The best twelve were staged by Mr. A. Bishop, Westley Hall, Bury St. Edmund's; and best six by Mr. J. C. Sharpe, Beccles.

The classes for amateurs were well filled, Mr. W. Albores, Beccles, taking the principal honours both for plants in pots and for cut blooms.

Fruit and vegetables were of good quality. N. Bacon Esq., exhibited the best collection of fruit, and Sir R. Beauchamp the best basket of vegetables—six dishes; also the best basket of salad. There was also the usual display of epergnes and hand-bouquets.

PUTNEY, WANDSWORTH, &c., CHRYSANTHEMUM.

NOVEMBER 11, 12.—There has been much new life infused into this Society during the past season or two. A good deal of work has been done which is likely to result in making the exhibition of some importance outside the immediate locality, hitherto its only sphere of influence. The show held in the Cromwell Hall was the twentieth held at Putney, and as will be seen below, some of the exhibits were very fine.

Since the last year's exhibition was held, there has been subscribed a sum of money for the provision of a Challenge Cup, value £25, and this was awarded in the Tradesmen's Commemorative Class for sixty cut blooms. The Cup (which is exceedingly handsome) will become the property of the exhibitor that shall first win it in competition on two occasions, not necessarily consecutive ones; and conditions have been made in favour of exhibitors to prevent the Cup remaining the property of the Society for a lengthened period. This class was decidedly the most interesting one at the show just held, and the rest were generally satisfactory. The arrangements were in the hands of Mr. J. F. McLeod, Hon. Secretary, and were capital.

The groups of Chrysanthemum plants were only permitted 40 feet superficial space each, but not fewer than twenty varieties were to be represented by the plants. Such a small space admits of but one method of arrangement; and an exhibit from Mr. W. Bedwell, gr. to — Lambert, Esq., North Avenue, was good, his blooms being very commendable. The class for groups of miscellaneous plants arranged for effect brought five exhibits, several of which were very pretty. The best came from Mr. A. Methven, gr. to W. Keith, Esq., Fernwood, Wimbledon Park, closely followed by Mr. A. Nevill, Sir Ed. Saunders' gr. at Fairlawn, Wimbledon Common.

Several classes for trained plants of Chrysanthemums were moderately contested. The most satisfactory were twelve plants of Chrysanthemums on single plants of Japanese varieties, in 6-inch pots, for a special prize offered by Mr. McLeod. They were shown by Mr. John French, gr. to Mrs. Barclay, Ambleside, Wimbledon Park.

Cut Blooms.—In the commemorative class for sixty cut blooms, distinct, inclusive of thirty-six Japanese, twelve incurved, and twelve Japanese incurved, there were three exhibitors; and the Challenge Cup and £4 was won by Mr. G. Hunt, gr. to Pantia Ralli, Esq., Ashstead Park, Epsom, whose exhibit was not only the best ever staged at Putney, but was remarkable for a really exceptional bloom of Mrs. R. Jones, which bore a very great resemblance to Mrs. Blick. This bloom was awarded the prize offered for the premier Japanese flower in the show. Other first-class blooms were those of J. Bidencope, Duchess of Wellington, Vicomtesse R. de Chazelles, Western King, Nyanza, Oceana, Madame Carnot, Simplicity, A. H. Wood, and M. Chenon de Leché. Of incurveds, the best were Golden Empress, Duchess of Fife, C. H. Curtis, Lady Dorothy, and Hero of Stoke Newington. Mr. J. French was a good 2nd, and Mr. Chas. Smith, gr. to W. Addison, Esq., Norbton Place, Kingston, 3rd.

The best exhibitor of twenty-four blooms of Japanese varieties was Mr. Jas. Portbury, Ripon House Gardens, Putney Heath; followed by Mr. J. Dark, gr. to J. Noakes, Esq., Lombard House, Putney; Mr. Jas. Portbury again winning for twelve Japanese blooms, distinct. Generally the Japanese blooms were fine in quality, and superior to those of incurveds.

Mr. Jas. Portbury won the classes for twenty four blooms and for twelve blooms of incurveds.

Mr. J. Wright, gr. to H. A. Tuffnell, Esq., The Grove, Wimbledon Park, won for six blooms of incurveds, six blooms of Anemone-flowered, six blooms of reflexed varieties, and for twelve bunches of Pompons.

The best single flowers were from Mr. E. Pearce, gr. to W. S. Page, Esq., The Limes, Putney.

There were minor classes for Chrysanthemums, and for Ferns, table plants, Primulas, berried plants Cyclamens, and florists arrangements. A moderate amount of good fruit was staged in competition, and the vegetables were satisfactory.

Miscellaneous.—Of non-competitive exhibits, a large group of choice plants from Messrs. Jas. Veitch & Sons, Ltd., Chelsea, was the best. There were others from Mr. R. Neal, Trinity Road Nurseries, Wandsworth; Mr. Geo. Stevens florist, Putney, &c.

PEOPLE'S PALACE HORTICULTURAL.

NOVEMBER 11, 12, 13.—The Chrysanthemum show was held in the spacious Queen's Hall, and the entries were very numerous, showing there is a considerable extension of Chrysanthemum culture in the East of London, while the quality of many of the plants and blooms was remarkable.

In what is known as the open districts—which embrace the less crowded parts, there were ten entries for six plants, and ten for two plants, eleven entries for twelve blooms of Japanese, and the same number for six blooms and ten for four. Incurred flowers were not so numerous, but excellent blooms were staged. Pompons are grown in the East, for there were eight entries of six bunches. Groups of 18 and 12 feet were also well shown. Not less satisfactory was the entries from the congested districts. There were ten entries of three plants, and eleven for two, ten of six blooms of Japanese, nine of four, fifteen of two white, fourteen of two yellow, and twenty of two of any other colour. The groups were placed round the sides of the hall; the cut blooms on long tables, the plants filling up the centre of the hall. It is satisfactory to note that the society is strong enough to make an exhibition without the help of much in the way of outside contributions.

Mr. J. H. WITTY, Nunhead Cemetery, had a fine group of plants, to which the Silver gilt Medal of the society was awarded; and in the evening Mr. Witty addressed the members on the culture of the Chrysanthemum. A group of plants came also from Mr. Kenyon, gr. to T. C. HILL, Esq., Monkham, to which a Silver Medal was awarded. Collections of very fine cut blooms came from Mr. W. BAXTER, Woking Village; Mr. G. Reynolds, gr. to the Messrs. DE ROTHSCHILD, Gunnersbury Park; and Mr. J. B. RIDING, nurseryman, Chingford.

WINDSOR CHRYSANTHEMUM

NOVEMBER 12.—A capital exhibition was held on the above date in the Albert Institute. The entries much exceeded those of last year, while the exhibits themselves showed marked improvement.

Groups of Chrysanthemums in the open class numbered five, and there was a like number in the class devoted to amateurs. In the former, Mr. Wm. Cole, gr. to Mrs. E. B. FOSTER, Clewer Manor, was ahead of his opponents, with plants well suited for the purpose, being dwarf in growth, and carrying exceedingly fine blooms. The arrangement was satisfactory and free from crowding; Mr. Bunce, gr. to WINKLEY SMITH, Esq., was a good 2nd.

In the amateurs' division, a similar award was made in favour of Mr. EDWARDS; the 2nd position being occupied by Dr. WYBORN, both staging really excellent plants and blooms.

Specimen trained Chrysanthemums were best staged by Mr. W. COLE also, who had good freely-flowered plants.

In a special class for one untrained plant, Mr. F. J. PAUL, gr. to Mrs. BROWNING, staged one of C. H. CURTIS fully 7 feet in diameter, wonderfully blossomed.

Cut blooms were staged numerous and well. The principal class was for thirty-six, half of them incurred and half Japanese. Mr. STENT, Round Oak, was a somewhat easy 1st, with full, handsome blooms in the Japanese, and fairly good ones in the incurred sections. Mr. Lane, gr. to Miss A. G. RIDGE, Ascot, was a good 2nd.

Mr. STENT was again successful in the class for twelve incurred, and a like number of Japanese blooms, exhibiting well in both sections; Mr. LANE was again 2nd.

The best twelve incurred blooms were staged by Mr. F. J. PAUL; they were not large, but of good quality; Mr. J. WILLIAMS, gr. to F. RICARDO, Esq., 2nd.

Mr. STENT staged exceedingly fine blossoms of C. H. CURTIS in the class for six incurred blooms of any one variety.

Japanese blooms, twelve varieties, were best shown by Mr. J. WILLIAMS.

Anemone-flowered varieties made a capital display. Mr. W. COLE staged handsome examples of these interesting flowers; Mr. J. WILLIAMS was a close 2nd.

Two interesting classes were provided for Chrysanthemums in vases, associated with other foliage. The principal class was that for twelve blooms with stems not less than 12 in. long. Mr. WOOD won the leading award with good blooms, agreeably intermixed with suitable foliage.

A basket or vase of cut Chrysanthemum blooms, suitable for table decoration, open only to ladies, was won by Mrs. YOUNG, with a capital basket of suitable blooms.

Fruit and vegetables made a good display. Mr. TITT had an interesting exhibit of wreaths, crosses, and other floral decorations.

WELLINGBOROUGH CHRYSANTHEMUM.

NOVEMBER 12, 13.—Wellingborough held its thirteenth annual exhibition on the above dates. The exhibits in cut blooms and groups were considerably more numerous than at any previous show held here. The society is to be congratulated for this enterprise.

For the best group of Chrysanthemums, Mr. WARD was placed 1st; and Mr. LUTON 2nd. Mr. WARD also had the best exhibit of six plants, and the finest specimen plant.

In the class for twenty-four cut blooms, Mr. J. Fulford, gr. to Mr. STOPFORD SACKVILLE, Drayton House, was 1st; and Mr. KIRBY, 2nd. Mr. KIRBY had the best twelve incurred blooms; and Mr. HAYES took 2nd prize.

For twelve Japanese, Mr. SHEPHERD was 1st, also for twelve white Japanese.

Messrs. H. R. & W. LACK, of Wellingborough, showed the best Primulas. Mr. HAYES had the best bouquet; and Mr. DOUGLAS the finest wreath.

Apples, Grapes, and Pears were shown, the chief winners being Messrs. CLAYTON & SONS, Mr. HAYES, Messrs. LACK & Co., and Mr. DOUGLAS.

Mr. HAYES also had the best vegetables.

The Society is in a flourishing condition, and subscriptions have been forthcoming very freely this year.

SHIRLEY AND SURROUNDING DISTRICTS GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.

NOVEMBER 13.—The monthly meeting of the above society was held at the parish room, Shirley, Southampton, on the above date. There was a very good attendance, presided over by Mr. B. LADHAMS, F.R.H.S. Mr. SHRIVELL, F.L.S., Tonbridge, gave a lecture on chemical manures for the garden, and his remarks were the result of four years' experiments carried on at Tonbridge, by himself and Dr. BERNARD DYER. The conclusion arrived at seems to point out that the most economical use of manures is a combination of chemical and stable manure, in proportions and kinds suitable to the crop to be grown. A large number of questions were put to Mr. SHRIVELL on the important subject, and at the close of the discussion, a hearty vote of thanks was accorded to him. There was a large display of Chrysanthemums made by the members.

IPSWICH CHRYSANTHEMUM.

NOVEMBER 16.—The Ipswich Chrysanthemum Society is to be congratulated on the great improvement in all departments, for plants, cut blooms, fruit and vegetables were shown of the highest quality.

Cut Blooms.—Thirty-six Japanese, distinct, 1st, Mr. Messenger, gr. to C. H. BERNERS, Esq., Woolverstone Park, Ipswich, staging fine fresh blooms of—Back row: Madame Carnot, Phœbus, Australis, Simplicity, E. Molyneux, Modestum, Mrs. H. Payne, Madame Moulin, International, C. Davis, Snowdon, Silver King. Middle row: M. Chenon de Leché, L'Isère, Etoile de Lyon, M. Pankoucke, Graphic, H. H. Spenser, Madame G. Henry, Duke of York, Amiral Avellan, Western King, G. C. Schwabe, John Seward. Front row: T. Wilkins, Madame E. Capitant, Mrs. C. Blick, Mons. Gruyer, Triomphe de St. Laurent, Mutual Friend, Vivand Morel, Salim, Mrs. H. Weeks, Mrs. F. Bevan, J. Brookes, Rose Wynn. 2nd, Mr. R. C. Notcutt, Broughton Road Nursery, Ipswich, amongst his best blooms being Australis, Silver King, Mons. Chenon de Leché, Mrs. C. H. Payne, Matthew Hodgson, Madame G. Henry, Miss E. Teichmann.

Twenty-four Japanese, distinct.—The competition in this class was exceedingly keen, chief honours falling to Mr. W. Allen, gr. to Lord SUFFIELD, Gunton Park, Norwich, who staged a capital lot of blooms, the best of them being Phœbus, Stanstead White, J. Machar, Vivand Morel, Mons. Chenon de Leché, Modestum, Mons. Gruyer, and I. Prefet Robert; closely followed by Mr. Rogers, gr. to Lord RENDLESHAM, Rendlesham Park, Wickham Market, who had fine blooms of Phœbus, Miss E. Teichmann, Mutual Friend, Vivand Morel.

Twelve Japanese distinct, Mr. ALLEN followed up his success in the twenty-four, winning with an excellent stand of bright fresh blooms; Mr. T. King, gr. to J. A. BURNES, Esq., Melton Lodge, Woodbridge, a good 2nd.

Twelve Japanese distinct, amateurs.—Mr. W. J. CATCHPOLE was a good 1st with clean, fresh blooms; 2nd, Rev. A. C. JOHNSON.

Groups of plants were a strong feature of the Show. The principal prize-takers being as follows:—Messrs. G. GILBERT, R. C. NOTCUTT, and W. J. CATCHPOLE, Esq.

Collection of cut Chrysanthemums arranged with foliage and plants.—1st, Mr. W. MESSENGER, with a tastefully arranged exhibit; 2nd, Mr. G. GILBERT.

Fruit was finely represented, the chief honours falling to Messrs. W. MESSENGER, ROGERS, and ALLEN.

Grapes, Apples, and Pears were extensively shown, of good size and colour.

Vegetables made a grand feature, of excellent quality, fresh and clean, Messrs. ROGERS and KING being 1st and 2nd respectively; nine collections were staged.

HAWKHURST CHRYSANTHEMUM.

NOVEMBER 16, 17.—The annual meeting of this Society was held in the Victoria Hall, Hawkhurst, and the committee may be congratulated on the general high character of the exhibits.

The chief prize-winners in the cut-bloom section were Mr. C. ENSOLE, gr. to Colonel PREVOST, Elford, who took 1st places for twenty-four Japanese, twenty-four incurred, twelve Japanese, twelve incurred, twelve Anemone, and twelve Pompons—a highly creditable performance. Mr. A. Feaver, gr. to R. NEVE, Esq., Ashlawn, Benenden, Kent, and Mr. H. FISCHAM, Hartley House, Cranbrook, were also prize-takers in this section.

For a group of Chrysanthemums in pots, Mr. C. ENSOLE also took the lead; while for a miscellaneous group, arranged or effect, Mr. W. Crump, gr. to the Misses GOLDSMID, Tongswood, Hawkhurst, was 1st.

In the fruit classes, Apples were splendidly shown by Mr. Cooper, The Moor, who gained four 1sts, his Peasegoof's Nonsuch being particularly noticeable.

Mr. H. Collins, gr. to H. S. ASHBE, Esq., Fowler's Park, Hawkhurst, took the lead for dessert Pears. Grapes were poor.

Vegetables are always a feature at the Hawkhurst shows, and they are staged well. In this instance, the quality was exceptionally good, the 1st prize in the professional class going to Mr. J. Knapp, gr. to T. HALL, Esq., Cranecroft, Hawkhurst.

MANCHESTER CHRYSANTHEMUM.

NOVEMBER 16, 17.—This was, in all respects, an excellent show. The cut flowers of this popular autumn flower and the plants were excellent, although we have seen more spirited competition.

An additional attraction was the group of varieties of Cotton plants which Mr. P. WEATHERS put up on the area beneath the orchestra, which, in a centre of cotton commerce, was keenly scanned. The Orchids, too, were a choice lot, and included the best of golden Cypripediums, Mr. BALL taking a Gold Medal for the six flowered plants that he showed at the Orchid meeting at the Coal Exchange, and again at the Drill Hall in London. In so far as Orchids were concerned, it was remarkable for a choice display.

CHRYSANTHEMUMS

were limited in number as regards pot plants, but the quality of the blooms was very marked. Mr. J. H. GADGUM, Didsbury; Mr. T. HARKER, Fallowfield; Mr. BEHRENS, Mr. GOODACKER, Elvaston; Mr. WATTS, Cheadle; and Mr. J. STANNING, Leyland, were principal exhibitors.

The cut flowers were very good, especially those in the stands of Mr. BEHRENS, Mr. PENNINGTON, Mr. GREENHALGH, Bolton Dene; Mr. STATTER, Miss LORD, and Mr. W. B. EDMONDSON. The exhibitors were not so numerous, but the quality of the exhibits stood out prominently.

ORCHIDS.

Some excellent mountain-grown Cypripedium insigne came from Mr. LEWIS, and a rather striking seedling of Calanthe vestita alba, large flower, and an albino. Mr. CYPHER had lots of good things which we cannot, with the limited space at disposal, enumerate.

The attendance was in all respects satisfactory, and the second day promises a bumper gathering. Great credit is due to the indefatigable Curator, Mr. WEATHERS; and such efforts put forth are sure to tell for the future finances of the Royal Botanic Garden.

THE NORTH PECKHAM AMATEUR CHRYSANTHEMUM SOCIETY.—Our readers may well ask, in dubious tones, "Is the Chrysanthemum craze really coming to an end?" after perusing the following letter, sent by the enthusiastic secretary of the North Peckham Amateur Chrysanthemum Society, Mr. WILLIAM NICHOLS:—"We had a grand show this year, over 200 entries, splendid blooms, and more than 4000 visitors; the value of the prizes was about £100, Messrs. W. EARLY and MEASE were the judges. I have for next year, now on view in the High Street, Peckham, three large and valuable marble clocks, also cheques to the value of £8 whereby to purchase the objects of art to be offered as prizes in 1898 for plants grown with a special manure. I can assure you, I intend, if it be at all possible, to make it next to the National Chrysanthemum Society. I was an old member of that society for many years; and a friend of the late W. HOLMES. You can see what our prizes were by the enclosed prize-list. [Most miscellaneous, forty in all. Ed.] We have altogether 200 members—not bad in three years; and when we extend it, of course, there will be many more. The radius of our operations is only about three-quarters of a mile; it is therefore not wise to commence in a large way at first."

NATIONAL CHRYSANTHEMUM.—At a meeting of the Floral Committee on the 15th inst., First-class Certificates of Merit were awarded to Mdlle. Lucie Faure, a large white incurred, full deep, highly promising, from Mr. W. J. Godfrey, Exmouth. To incurred Japanese Mdlle. Lawrence Zede, pale lilac-pink with light centre, of the build of Mrs. C. H. Payne, large and full; and Earlwood Beauty, a large white single variety with somewhat drooping tubular petals, from Mr. W. Wells, Earlwood, Redhill. To Japanese Mrs. G. Carpenter, pale bright lilac-purple with silvery reverse, and long curling basal petals, a fine exhibition variety, from Mr. G. Carpenter, West Hill, Byfleet. To incurred Ernest Cannell, a fine full flower of a soft buttery-cream colour, excellent in build and petal, from Mr. R. Leadbetter, Elmstead Lodge, Chislehurst. To Japanese Master

H. Tucker, a very fine flower, bright golden amyranth on the surface, with bronzy-gold reverse, from Mr. H. Shoemith, nurseryman, Woking. Commendations were given to incurred Madame Ferlat, a large white, much in the way of Mdlle. Lucie Faure, from Mr. W. Wells; also to Japanese General Roberts, in the way of Eva Knowles, not so good as shown, but yet promising, from Mr. J. Ollerhead, Wimbledon. Several very promising varieties the Committee wished to see again. A small Silver Medal was awarded to Mr. William Wells for a collection of new Chrysanthemums.

SCOTTISH HORTICULTURAL.

NOVEMBER 18, 19, 20.—The annual Chrysanthemum exhibition held by this Society of three days' duration, was opened on Thursday, November 18, in the Waverley Market, Edinburgh. This year's exhibition is undoubtedly the largest of its kind ever held in Scotland, and this may be accounted for by the special efforts of the Council to commemorate the Diamond Jubilee of Her Majesty's Reign, the incentive to a large exhibition, and strong competition being offered by the Society in prizes of large value; especially is this the case in the Diamond Jubilee prizes, open to all gardeners and amateurs. This has brought eleven entries, the competition being exceedingly keen.

Other prizes, both ordinary and special, have also brought forward strong competition, in some classes in the cut flower section the entries number over thirty; while among vegetables, always splendidly shown, at Edinburgh over fifty names are entered.

Over twelve hundred and fifty entries are made for the entire show, and so hard have the council been pressed for space by intending exhibitors, that even in such a splendidly adapted and spacious structure as the Waverley Market many nurserymen exhibitors have been unavoidably declined space.

This speaks for itself in regard to the success of the Show. On usual occasions the non-competitive exhibits staged by nurserymen have been needed to give the market a furnished appearance. Since the installation of the electric light, the light thrown over the whole of this large building has been greatly improved, and a good view is everywhere obtainable. The market, as usual, is tastefully draped and decorated by Messrs. Cranston & Elliot. The Council and different sectional committees have been severely taxed, but their arrangements have been satisfactorily carried out, while the efforts of the Treasurer, Mr. A. Mackenzie, and the energetic secretary, Mr. R. Laird, have been considerable. The opening ceremony was suitably performed by Mr. Thomas Gibson Carmichael, and presided over by the Right Hon. Mitchell Thomson, Lord Provost of Edinburgh. As the surplus proceeds from the exhibition are to be devoted to local and horticultural charities, it is hoped these will be as generous as the objects merit.

Twenty vases of Chrysanthemums in twenty varieties, true blooms of each Chrysanthemum foliage only to be used. The Grand Victoria Jubilee Prize of £50 in cash and Victorian Gold Medal, was won by Mr. A. Haggart, gr. to Hon. Lucius Brien, Moor Park, Ludlow, with a grand lot of the following varieties, Western King, Chas. Davis, Graphic, M. Grayer, Implicity, Jas. Biddenscope, M. Pankoucke, M. D., A. D. batin, Mrs. H. Cross, Edith Tabor, Lady Ridgway, Etolle a Lyon, Niveum, Mrs. W. H. Lees, M. Chenon de Leché, Tabordier, Australian Gold, Mrs. H. Weeks, Vivand ore, and Richard Dean; the 2nd prize of £30 and Victorian Silver Medal was won by Mr. W. H. Lees, gr. to W. BEVAN, sq., Trent Park, with a very fine and bright fresh lot, but a quite so heavy as the 1st prize lot; 3rd prize of £15 R. McHATTIE, Strathfieldaye, Wauke; the 4th prize of £10, Mr. P. WATERER, Fawkham, Kent; 5th prize, £8, Mr. BLAIR, gr. to Trentham Park; 6th prize of £7, Mr. W. DIVERS, . Belvoir Castle.

City of Edinburgh prize of £25, for forty-eight cut blooms, unique, distinct; Mr. HOGGARD was again 1st, with Mrs. aling Grant, Mr. W. H. Lees, Dorothy Seward, Mr. H. C. lyne, Miss Maggie Blinkiron, M. Ricoud, Madame A. olin, H. L. Sunderbruck, Pride of Wadford, Simplicity, . Chas. Molin, John Seward, A. H. Ward, Phobus, M. scribe Rey, Chas. Davis, Niveum, Duke of York, Moor rk, Australian Gold, Etolle de Lyon, Lady Ridgway, r. H. Weeks, M. A. de Galbert, Chenon de Leché, Western ing, G. C. Schwabe, Hermann Kloss, M. Ad. Chatin, ichard Dean, Australia, Mr. F. A. Bevan, C. Mely, J. idenscope, Dorothy Shea, C. W. Richardson, Madame Carnot, eans, M. Montigny, Internati nal, Modestum, Van den eede, Vivand Morel, Rose Wynne, Mons. Pankoucke, Mr. r. Ironides, Edith Tabor, and Mutual Friend. 2nd, Mr. J. EWART, gr. to Castle Huntly, Longforan. 3rd, Mr. J. ORDYCE, Bonall Tower, Colinton. 4th, Mr. D. NICHOLL, oowie, Forquandenny. 5th, Mr. R. ADDISON, Black House, telmorlie. There were ten entries in this class.

Seventy-two Vases Japanese Blooms in as many varieties.— Old Victorian Medal offered by the Scottish Horticultural association and five pounds in money, was won by Mr. R. W. MURRAY, Blackford House, Edinburgh; 2nd, Mr. D. ehol, gr. to J. W. BELL, Esq., Rosale; 3rd, Mr. J. FOSTER, ellwood Park, Selkirk.

Twenty-four Incurred.—1st, Mr. J. MARTIN, Corndean Hall, Winchcombe; 2nd, Mr. J. McHATTIE; 3rd, Mr. P. BLAIR.

Twelve Incurred.—1st, Mr. W. H. Lees, with a nest stand; 2nd, Mr. J. MARTIN.

PLANTS.—The number of specimen plants was far in excess of previous years, huge well-flowered specimens being generally shown. The judges for this section of the show were Mr. Fraser Smith, Cullen House, Cullen, and Mr. George Hay, Garvald House, Dolphinton.

In the class for six pot-plants, distinct varieties, Mr. D. CAVANAUGH, St. Edward's, Murrayfield, was 1st, with a finely-flowered, even collection of plants; 2nd, Mr. JOSEPH HOLMES, Winton Castle, Pencoatlant.

For six Pompons, Mr. P. HUNT, Colbridge Hall, Murrayfield, secured 1st place for huge specimens generally; the varieties Nellie Rainford and Rosinante were particularly good. Mr. W. FULMAN, Holly Wood, Colinton Road, was 2nd with smaller specimens.

Mr. D. CAVANAUGH also secured 1st for six Japanese varieties, among eight entries, with superb plants; 2nd, Mr. W. BENNETT, Hanley Gogar.

For two distinct pot plants, Mr. J. HOLMES was again 1st. The best single orange-coloured Chrysanthemum came from Mr. CAVANAUGH, the variety being President Lincoln. The same exhibitor secured 1st places in the classes for both bronze and crimson-flowered varieties. Mr. ABBOT, with a good specimen of Madame de Senn, was 1st for a single specimen of a purple-flowered variety. The Pompon from Mr. J. WALDIE, Dollarbag, Dollar, was capital, and 1st among the eight competitors.

The 1st prize in the class for the best pot plant competition limited to gardeners and amateurs, was awarded to Mr. D. CAVANAUGH, for a grand specimen of Vivand Morel. The best plant of Pompon Rosinante was sent by Mr. P. HUNT, Colbridge Hall.

In the amateurs' class, the prize for the best plant was gained by Mr. A. HOGG, Newtown, Pencoatlant, and was awarded a Silver Medal. Mr. Hogg was also 1st for the best white-flowered Chrysanthemum, the variety being Avalanche.

Three groups were arranged for effect, the successful 1st prize group having been arranged by Mr. G. Wood, gr. to Mr. BUCHANAN, Oswald House, Edinburgh; 2nd, Mr. Jardine, gr. to Miss MURRAY, Gartshore, Ravelston; 3rd, Mr. P. HUNT, Colbridge Hall.

In the class for Palms confined to Nurserymen, Messrs. R. B. LAIRD & SONS were the winners of the 1st prize, for six plants in pots of 9-inch diameter, and for four plants in tubs.

For eight plants in 16-inch pots or tubs, Messrs. DOWNIE were 1st. In the class for eight decorative plants Mr. MACKAY, Kingston Grange, Liberton, took leading honours.

FRUITS.

Grapes were well exhibited; the bunches and berries being large and well coloured. The best four distinct varieties came from Mr. D. AIRDRIE, Larbert House, Larbert, the Muscats and Gros Marocs deserving special note; 2nd, Mr. G. PATERSON, Benochill Park, Kirkcaldy. For two bunches Mr. T. LUNT, Keir House, Dunblane, was 1st; 2nd, Mr. J. MACNEILL, Priorsford, Peebles. Mr. T. LUNT also secured 1st prize for Muscat of Alexandria with excellent bunches of well-ripened fruit. In the class for Alicantes, Mr. J. LESLIE, Pitoullan House, Perth, was 1st.

The best collection of Eight Dishes of fruit was from Mr. MCINTYRE, The Glen, Innerleithen, with specially good Grapes, Pears, Apples, and Melons. For two Smooth Cayenne Pines this exhibitor was also 1st. Mr. W. LAING, Wellfield, Gateside, was 1st for six Pears grown in Scotland. For six varieties of Pears, Mr. T. THOMSON, Cherry Trees, Kelso, was 1st. For six dessert Apples, Mr. J. DAY, Galloway House, Garscadden, was 1st; Mr. J. CAIRNS, Coldstream, 2nd. Mr. J. DAY was also 1st in the class for eighteen varieties of Apples, and Mr. J. CAIRNS was 2nd.

VEGETABLES.

The best collection of vegetables, consisting of ten distinct kinds were from Mr. W. HARPER, Tulliebelton House, Perth. His was a splendid lot; and Mr. A. C. CAMERON, Binnock, Dundee, was 2nd; and Mr. J. WALDIE, Dollarbag, Dollar, 3rd, among twelve competitors.

For a collection of six kinds, the 1st prize was won by Mr. A. C. CAMERON; 2nd, Mr. A. DIXON, Glenormiston, Innerleithen; and 3rd, Mr. J. WALDIE.

Leeks, Brussels Sprouts, Cauliflowers, and Tomatoes, were very strongly contested. Several dishes of Peas were noticeable in the collection.

NURSERYMEN'S EXHIBITS.

Mr. JONES, Eyecroft Nursery, Lewisham, staged a lot of Begonia Gloire de Lorraine, which were models of good culture, and formed one of the principal features of the show; many superb varieties of Chrysanthemums; and finishing off a grand exhibition stand of blooms of Chrysanthemum Western King that were specially fine.

Messrs. DOBBIE & Co., Rothessay, had a number of varieties of Chrysanthemums and Potatoes, a new variety named The Crofter, a late round form of clean appearance being amongst them.

Messrs. THOMPSON & SONS showed Grapes, Tomatoes, and Plants.

A stall in aid of the Gardeners' Orphan Fund, to which we wish every success, was a feature of the show.

TRADE NOTICE.

MR. H. A. BURBERRY.

It will be interesting to many to learn that Mr. H. A. Burberry, for many years chief Orchid-grower to the Right Hon. Joseph Chamberlain, and author of *The Amateur Orchid-cultivator's Guide-book*, has resigned his post, and commenced business as a consulting expert on all matters pertaining to Orchids. Seeing that some or other of the plants in a large proportion of our Orchid collections are often ailing, and considering the value of many of the subjects so affected, it should be a relief both to their owners and their growers to have a man of such experience and skill to call in and advise with them. Apart from any question of superior skill, it is a known fact that an experienced man called in for the occasion, often detects the cause of failure, which, in consequence of daily familiarity with the surroundings, had not been evident to those in charge. We wish Mr. Burberry every success.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 45° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the week ending November 13.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.					
Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Ins.					
0	7 +	48	0	+ 212	— 27	1 +	194	36.3	6	30
1	8 +	48	0	+ 38	— 13	1 —	175	24.9	6	32
2	5 +	46	0	+ 100	— 108	4 —	155	20.4	1	34
3	4 +	39	0	+ 146	— 146	5 —	149	19.9	2	35
4	5 +	43	0	+ 82	— 149	3 —	148	22.9	4	26
5	5 +	55	0	+ 264	— 205	5 —	140	22.0	10	40
6	7 +	58	0	+ 123	— 51	11 +	187	37.9	6	32
7	6 +	62	0	+ 184	— 116	1 +	170	28.5	10	35
8	6 +	70	0	+ 281	— 132	1 +	177	35.7	8	39
9	7 +	62	0	+ 79	— 19	0 aver	200	34.1	15	30
10	7 +	78	0	+ 322	— 83	16 +	189	39.0	22	33
*	5 +	89	0	+ 399	— 80	2 —	188	30.1	21	42

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Graving, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending November 13, is furnished from the Meteorological Office:—

"The weather during this period became very unsettled, with frequent and heavy rain in the western and north-western districts. In the east and south-east, however, the conditions were comparatively dry, although slight rain occurred during the early days of the week. Fog was experienced from time to time over England, and much cloud prevailed.

"The temperature was much above the mean, the excess ranging from 4° in 'England, E.' to 6° or 7° in all the western districts, and in 'Scotland, N.' and to 8° in 'Scotland, E.' The highest of the maxima were recorded during the latter half of the week, and varied from 63° in 'England, N.W.', and 61° or 60° in most other districts, to 58° in 'Scotland, N.', and 57° in

'Scotland, W.' The minima were, as a rule, very high for the time of year, but were relatively low in many places both at the commencement and towards the end of the period. The absolute minima ranged from 29° in 'England, E.', 31° in the 'Midland Counties,' and 32° in 'England, S.W.', to 40° over Ireland, and to 43° in the 'Channel Islands.'

'The rainfall was again less than the mean in all the Wheat-producing districts, and in the Channel Islands. In the western and extreme northern parts of the kingdom, however, there was an excess, that in 'Scotland, W.', and in 'Ireland, S.', being very large.

'The bright sunshine was much below the normal, especially over Great Britain. The percentage of the possible duration ranged from 22 in 'Ireland, S.', and 21 in the 'Channel Islands,' to 6 over 'Scotland,' to 2 in 'England, E.', and to 1 in 'England, N.E.'

MARKETS.

COVENT GARDEN, NOVEMBER 18.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, 12 blooms... 4 0-6 0	Mignonette, dz. bn. 2 0-4 0
Bouvardias, pr. bun. 0 4-0 6	Orchids:—
Carnations, pr. doz. blooms... 1 0-3 0	Cattleya, 12 bms. 6 0-9 0
Chrysanthemums, p. doz. blooms... 0 6-2 6	Odontoglossum crispum, 12 bms. 1 6-3 0
— p. doz. bunches 3 0-6 0	Pelargoniums, scarlet, per 12 bun. 4 0-6 0
Eucharis, per dozen 4 0-6 0	— per 12 sprays... 0 4-0 6
Gardenias, per doz. blooms... 2 0-3 0	Pyrethrums, per 12 bunches... 1 6-2 6
Hyacinth, Roman, dozen sprays... 0 9-1 6	Roses, Tea, per doz. — yellow (Pearls), per dozen... 2 0-4 0
Lilac, French, per bunch... 3 0-4 0	— red, per dozen... 1 0-2 0
Lilium Harris, per doz. blooms... 4 0-6 0	— pink, per doz. 1 6-2 6
— Lancifolium, per doz. blooms 1 6-2 0	— Safrano, p. doz. 1 0-2 0
Lily of the Valley, dozen sprays... 1 0-2 0	Roses, per doz. bun. 4 0-6 0
Maidenhair Fern, per 12 bunches... 4 0-8 0	Stephanotis, dozen sprays... 3 0-4 0
Marguerites, per 12 bunches... 2 0-4 0	Tuberose, 12 bms. 0 3-4 0
	Violets, 12 bunches 1 6-2 0
	— Parme, French 2 0-3 6
	White Narcissus, French, 12 bun... 2 0-4 0

ORCHID-BLOOM IN VARIETY

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples (Cox's Orange), pr. bush. 14 0-16 0	Grapes, Muscats, "Cannon Hall," per lb. 2 0-4 0
— (Ribston), bsh. 14 0-16 0	— Muscats, selected, per lb. 2 0-2 6
— (Blenheim Orange), selected, p. bush. 9 0-10 0	— Muscats, 2nd quality, per lb. 0 9-1 3
— (Wellingtons), selected, bush. 9 0-10 0	Nuts, Cobs, per 100 lb. 22 6-25 0
— common vars., per bushel 2 6-4 0	Pears, small, bush. 3 0-4 0
Grapes, Gros Colmar, per lb. 1 6-2 0	— stewing, bush. 4 0-8 0
— 2nd qual., lb. 8-10	— Californian, various, per case 7 0-16 0
— Gros Maroc, lb. 1 0-1 6	— D du Comice, per case 23 0-—
— Alcantas, p. lb. 1 0-1 8	Pine-apples, St. Michael, cases containing 6 to 8... 4 6-5 0
— 2nd qual., lb. 0 6-8 8	— cases containing 10 to 12... 1 6-2 0
— Hamburgs, selected, per lb. 1 0-1 6	
— 2nd qual., lb. 0 8-0 9	

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz. 3 0-3 6	Onions (pickling), per pocket 2 0-3 0
— Chinese (Stachys tuberifera), per lb. 0 3-—	— skinned, 1 bush... 2 6-3 0
Beans (Madrera), per bush (about 6 lb.) 1 0-1 6	— Dutch, per bag 3 0-—
— French, Channel Islands, lb. 0 8-—	— Albanian, per bag 4 6-4 6
Beetroots, p. bush. 1 3-1 6	Radish (long scarlet), Channel Islands, per 12 bunches 0 6-0 8
Capiscum, Chili, p. 100... 1 6-—	Salad, small, per doz. punnets 1 6-—
Caulliflowers, per tally (5 doz.) 5 0-6 0	Shallots, per lb. 0 2-—
Cucumbers, home-grown, select., per doz. 3 0-3 6	Sprouts, per 1 bushel 1 0-1 3
Garlic, per lb. 0 2-—	Tomatoes, selected, per doz. lb. 3 0-4 0
Horseradish (German), per bundle 1 4-1 6	— Medium, doz. lb. 2 0-3 0
Mushrooms (Indoor), per lb. 0 8-0 10	— Seconds, do. 1 0-1 6
	— Canary Islands, per case, 36 lb. 8 0-9 6

POTATOES.

Second-class Potatoes have weakened a shade owing to larger arrivals of foreign. Snowdrops, 80s. to 110s.; Up-to-dates, 85s. to 110s.; Maincrops, 80s. to 100s.; Saxons and Bruce, 80s. to 95s.; Blacklands, 70s. to 75s.; per ton. Belgium and Dutch Ware, 3s. to 3s. 3d.; German Ware, 3s. 3d. to 4s. per bag of 50 kilos. John Bath, 32 and 34, Wellington Street, Covent Garden, W.C.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantum, per doz. 4 0-12 0	Evergreen shrubs, in variety, doz. 6 0-24 0
Aspidistras, per doz. 12 0-30 0	Ferns, small, doz. 1 0-2 0
— specimen, each 5 0-15 0	— various, doz. 5 0-12 0
Chrysanthemums, p. doz. pots 5 0-9 0	Foliage plants, per dozen 12 0-36 0
— specimen, or large plants, ea. 1 6-2 6	Lilliums, various, per dozen 9 0-12 0
Dracenas, each 1 0-7 6	Marguerites, p. doz. 6 0-9 0
— various, p. doz. 12 0-24 0	Mignonette, p. doz. 4 0-6 0
Erica, various, per dozen 9 0-18 0	Palms, various, ea. 2 0-10 0
Ficus elastic, each 1 0-7 6	— specimens, ea. 10 6-84 0

SEEDS.

LONDON: November 17.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., report an inactive and uninteresting market. Business in Clover-seeds is, for the time of year, unusually meagre. Winter Tares, owing to the continued speculative demand, and the attractively low price, are getting into narrow compass. Rye keeps steady. Full values are asked for Mustard and Rape seed. The Linseed trade is quiet. Blue Peas and Haricot Beans command late rates. As regards bird seeds, transactions are at present limited, both in number and extent. The Board of Trade Returns give the imports of Clover and grass seeds into the United Kingdom for the ten months ending October 31, 1897, as 220,051 cwt., value £432,918, as against 317,708 cwt., value £690,350, for the corresponding period of 1896.

CORN.

AVERAGE PRICES of British Corn (per imperial qr.), for the week ending November 13, and for the corresponding period of 1896, together with the difference in the quotations. These figures are based on the Official Weekly Return:—

Description.	1896.	1897.	Difference.
s. d.	s. d.	s. d.	s. d.
Wheat	31 9	34 0	+ 2 3
Barley	27 3	26 3	- 1 0
Oats	17 7	16 3	- 1 4

(Markets carried over to p. ix.)

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

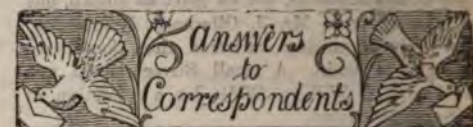
Will some Chrysanthemum specialist or reader of *Gardeners' Chronicle* kindly advise me as to the best time to stop the following varieties to secure the buds at the right time to produce first-class blooms from three to six on a plant, and also if any of them need specially potting, and also the time to put in cuttings in cold greenhouse—

INCURVES.	JAPANESE.
C. H. Curtis	Mme. Carnot
Globe d'Or	G. C. Schwabe
J. Agate	Vivian Morel
Lord Alcester	Charles Davis
Queen of England	Green Chrysanthemum
Robert Cannell	Duchess of Wellington
John Lambert	Silver Cloud
Mrs. Robinson King	Val de Andorre
Baron Hirsch	Annie Clibran
Mrs. W. Shipman	Noces d'Or
Mrs. G. Rundle	Mona, C. Molin
	Louisa
	International
	J. P. Kendall
	Mme. Thés. Roy
	Thos. Wilkins
	Mme. Marie Hoste
	White Louis Bohmer

J. R. A.

An authority on the cultivation of Chrysanthemums, replies as follows:—"At the outset, I would say no method of treatment will enable a cultivator to produce first-class blooms of some of the varieties named on the list referred to, at least, if exhibiting is a point of consideration. Varieties like Mrs. G. Rundle in the incurved section, Val d'Andorre, Annie Clibran, and White Louis Bohmer in the Japanese, are now much too small to take even a third-rate position in strong competition. It is wise to have more than one plant of a sort, manage one on the topping principle, the other on what is known as the natural method of cultivation, viz.: Allow the latter to grow away uninterruptedly until the first natural break occurs in March, April, or May, as the case may be. In both methods of culture, insert the cuttings early in December, which enables the plants to grow away slowly, so that the growth has ample time to mature; without maturity, it is useless to expect blooms of high quality. As to topping the plants, the first or second week in April is the most suitable period. Topping, however, so much depends upon the state of the plants that it is difficult to advise. If they are weakly, they of course are not so amen-

able to treatment of a special nature as those of stronger growth. Another point: six blooms on a plant is rather too many to produce blooms equal to what is obtained when three are grown on a plant, especially of the large growing varieties."



* * Owing to the pressure on our space, several reports of Chrysanthemum and other shows are held over till our next issue.

BOUVARDIA DISEASE: C. B. W. Too well known in its results, but, we are sorry to say, the cause and cure are alike doubtful.

CHRYSANTHEMUM FUNGUS: Jas. C. The worst case we have yet seen of "rust," due to a species of fungus, Uredo. This pest threatens to become a most troublesome one, many of our correspondents having lately favoured us with affected specimens. If you will refer to *Gardeners' Chronicle*, Oct. 9, p. 256, and Oct. 23, p. 294, you will find the pest described, and the possible measures of prevention discussed.

CHRYSANTHEMUMS, NEW: A. C. You should send a specimen to the meeting of the Floral Committee of the Royal Horticultural Society, or of the National Chrysanthemum Society. Meetings of the latter body will be held on November 22 and 29, and December 7 and 13 at the Royal Aquarium, Westminster.

CITRUS TRIFOLIATA: Westwood. This plant may be obtained at Messrs. J. Veitch & Sons' nursery, King's Road, Chelsea, London, S.W.

CYPRIPEDIUM: H. J. R. The hybrid *Cypripedium* sent seems to be a variety of *C. x Alcides* (*hirsutissimum* x *insigne*) described in the *Gardeners' Chronicle*, January 10, 1891, p. 40. A plant of it was shown at the Royal Horticultural Society's meeting on November 9.

FOREIGN FRUIT—CACQUIN, OR CAQUISE: Caquique. We know of no fruit under this name, although etymologically the name given is similar to the French *Coignassier*—Quince.

NAMES OF FRUITS: P. A. W. 1, Northern Greening; 2, Warner's King; 3, Golden Noble; 4, Shepherd's Newington; 5, Byson Wood Russet; 6, Adams' Pearmain.—J. Lawrie. 1, Tower of Glamis; 6, Bess Pool; 7, Reineette du Canada.—Q. R. Tower of Glamis.—C. R. 1, Beauty of Kent; 3, Rosemary Russet; 4, Dutch Mignonne. From the other three fruits the labels had become detached.—Judo. Your specimens of Pears are much too overripe.

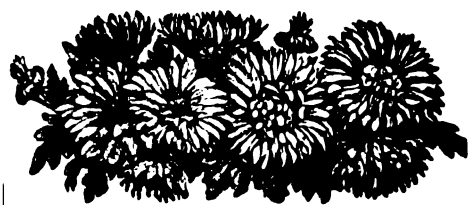
NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—J. & Co. Saintpaulia ionantha.—P. C. P. 1, Berberis Darwini; 2, Veronica variegata; 3, V. Traversii; 4, Diosma ericoides; 5, Elaeagnus pungens.—J. Nat. 1, Pteris tremula; 2, Cyperus alternifolius; 3, Adiantum capillus-veneris; 4, Asparagus decumbens of gardens; 5, Adiantum cuneatum grandiceps; 6, Dracena intermedia.

PATENTS: Z. A. Make personal application at the Patent Office to register your patent, which you will be allowed to do if it has not been anticipated.

SINGLE CHRYSANTHEMUM: R. M. It is a very pretty white bloom, but hardly fresh. It is curious as a sport from the variety you name, a circumstance we should never have guessed.

COMMUNICATIONS RECEIVED.—G. F.—O. S.—G. H.—B. D. J.—C. T. D.—H. H. D'O., too late for this week.—M. H. S.—W. P.—W. T. T.—F. Sander & Co.—W. G. S.—Balt. Veitch & Son.—P. & M., too late for this week's issue.—F. Riviere.—J. N. H., next week.—C. J. L., we have no such illustrations as you wish.—H. R. H.—E. J. L.—J. H. W.—G. W.—R. H. W.—F. A.—R. M. R.—A. W.—W. J.—W. M.—H. M.—J. T. F.—W. B.—A. C. F.—W. H. D.—A. T. B.—U.S.A.—W. R.—W. T.—H. H. R.—R. C. H.—O. S.—W. H. Rose.—A. D.—C. W.—Hugh Dixon.—G. R.—E. F. G.

PHOTOGRAPHS, SPECIMENS, ETC., RECEIVED.—F. W. B.—The Earl of D.—F. A. W., Burlington.—G. M., Romsey.



THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 27, 1897.

THE HYACINTH IN 1768.

NOW that the planting of this ever-popular spring flower is in full force, attention may, not inappropriately, be called to one of the most curious and exhaustive treatises on the subject ever published. I refer to *Des Jacintes, de leur Anatomie, Reproduction, et Culture*, which appeared in French at Amsterdam in 1768. The name of the author is not given in the work; but from other sources we learn that it was written by the Marquis M. H. de Saint Simon. The book extends to 164 pages quarto, in addition to ten beautifully-engraved full-page plates, and several lists of varieties at that time under cultivation. The compilation was clearly a work of love on the part of the author, for, within its proper limits, no phase down even to the minutest detail is omitted.

The Hyacinth, he tells us, is of all flowers that which presents the most agreeable diversity in all its aspects; its form, its height, its colours, and even its odour more or less varies in all its forms, of which, at the time of writing, there were nearly 2000 cultivated at Haarlem. The author speaks in a somewhat suppressed style of enthusiasm of the extreme beauty of Haarlem when these flowers are in their full beauty — “l'imagination ne se forme qu'un tableau très-imparfait des graces et de la variété de ce brillant émail.” This effect is not attained without great forethought and consideration, for their successful culture involves special and uninterrupted attention, constant work, and the display of much taste, all of which are, of course, greatly aided by the congenial soil and climate of Haarlem.

Nothing is known for certain of either the colour or the origin of the first Hyacinth. It is, like its name, probably of oriental extraction. Some authors trace its earliest mention to the *Book of Exodus*. We may conveniently leave the *surants* to fight out amongst themselves the history of the Hyacinth, so far as regards the references, real or imaginary, to it in the ancient classics. In connection with the original colour, there is a very general agreement that this was blue, as this colour is found indigenous to most of the European woods, the form having red flowers being comparatively rare. The Marquis de Saint Simon is of opinion, however, that the red is the type from which all the thousands of varieties have sprung, and he advances many excellent reasons and authorities for such a theory. The author does not waste much space in discussing points which are, after all, of very little consequence

from a practical point of view. It is of far greater importance to know the physiology of the bulb itself, and it is into this phase of the subject that the author enters with a minuteness almost bewildering. An entire chapter is devoted to the outward “signs and tokens” of good, sound, and healthy bulbs.

The next chapter, a long one of ten pages, deals with the “racines” of the Hyacinth, that is, the roots thrown out by the bulb. The author comes to the conclusion, after microscopic and other investigation, that these “racines” are “vaisseaux excrétoires et non des pompes aspirantes.” He points out that in many instances the bulbs have been found to flower without these racines, citing in particular one of the earliest, and perhaps one of the poorest in quality, the variety “de Janvier,” which throws out its flowers without the aid of either earth or water. The “racines” of the Hyacinth do not resemble any other analogous organs in plants or trees. In the pursuit of his investigations, the author placed a number of bulbs in glasses with water adulterated with carmine, gum, prepared verdigris, indigo, Prussian blue, cochineal, Indian ink, madder, and oil, and yet for the most part the roots were duly found on the flower developed; whilst in other cases the roots have been thrown out whilst the flower itself has been manifestly injured. A good deal of space is devoted to those very interesting experiments, into which it is scarcely necessary in this place to enter fully. A single chapter is devoted to a consideration of the scales or outer covering which preserves and nourishes the rudimentary flower; another to the suckers or offshoots, and another to the seeds of the Hyacinth.

The latter chapter contains a few interesting facts about the double-flowered Hyacinth. A century ago (i.e., a century before the year 1768) the double form was neither cultivated nor known. Swertius, in his *Florilegium*, printed at Arnheim in 1620, gives figures of about forty varieties or species of Hyacinth, all of which are single. The first double variety was a seedling which appeared in the gardens of Peter Voorhelm (whose business was still carried on at the same place by his grandson, George Voorhelm, when Saint Simon wrote his book), at Haarlem. At that time, the exact date is not certain, but it was probably towards the latter part of the seventeenth century, all the bulb growers waged incessant warfare against all Hyacinths raised from seeds or offshoots bearing flowers which in any way did not conform to the conventional notions of a perfect flower. The idea of a double variety does not appear to have entered even into the dreams of the Dutch florists. But (and the story reads almost like a page out of Dumas) Peter Voorhelm was taken ill, and could give no attention to his plants, and was unable to examine them until the Hyacinths were beginning to die off. A flower of unusual form arrested his attention, and examination proved it to be a double Hyacinth; it was very small, but he cultivated and multiplied it, and was soon able to place it on the market, whilst numerous amateur growers were found willing to pay high prices for the new bulb. The *editio princeps*, if it may be so

termed, of the first double Hyacinth had a comparatively short life, for it was lost long before 1768. The two second double varieties discovered subsequently were named, respectively, Marie and the Roi de la Grande Bretagne, the latter obviously in honour of Dutch William. The latter was raised about 1698, and was infinitely the finest of the first three varieties, and over a thousand florins was paid for a single bulb. It thrived exceedingly in climates warmer than that of Haarlem; in colour it was white mixed with red.

The consideration of the anatomy and generation of the Hyacinth forms perhaps the most important chapter in the book; certainly, it is the longest, and extends to over seventy pages. The Marquis of Saint Simon, not content with recording his own exceedingly elaborate and careful researches, completely digests all that had been previously written on the subject, English as well as foreign; even that rather shallow philosopher (whom the Marquis describes as one of the “plus sublimes des Philosophes Anglois”) Alexander Pope, is dragged into the matter! Indeed, the chapter itself might very well have been published as an independent treatise on the generation of plants, it is so all-embracing. The concluding chapter, which extends to thirty pages, deals with the cultivation of the Hyacinth, and mention is made, *inter alia*, of the “singularités” of the different varieties at that time under cultivation. Here also our author's passion for thoroughness is manifest, and his extensive inquiries and reading equally obvious.

We need not, however, stay to analyse this chapter; but he quotes a very interesting paragraph from the work of George Voorhelm, on the *Culture des Jacintes*, in which that eminently practical grower insists that amateurs may grow the Hyacinth with as great a success as the Dutch growers, if they take the same amount of trouble. Moreover, “Je finis en souhaitant qu'il se trouve encore quelqu' Amateur dont les connoissances soient plus grandes que les miennes, et s'il en est un, je le prie pour les vrais Curieux et pour moi de mettre la main à la plume.”

The penultimate paragraph deals with the experiences of our old friend “le célèbre Philippe Müller,” otherwise Philip Miller, who states, in the article on the Hyacinth in his “*Dictionary*,” that the bulbs sent from Holland in 1730, not only flowered beautifully in his garden, but that he was as successful in their cultivation as the Dutch growers.

Included, apparently as an after-thought, for the pagination is independent of the text of the book, is a most interesting catalogue of the Hyacinths known in 1767. About 1,670 varieties, double and single, are here enumerated, and it would be very interesting to know if any of them are still in cultivation. Probably not; although many of the names are familiar, it is more than likely that they are applied to new forms. Following this catalogue, comes a very interesting analysis of George Voorhelm's Hyacinth-bed in nine rows, five of which contained thirty-eight, and four of thirty-seven Hyacinths each, or a total of 338. A Hyacinth-bed of J. Kreps in six rows of forty-one bulbs each; and, finally, a bed formed by an amateur (Mr. Cock), in seven rows of thirty-seven bulbs, conclude this exhaustive monograph, which will well repay perusal by those who make the Hyacinth a special study. W. Rober

NEW OR NOTEWORTHY PLANTS.

SELAGINELLA CRUGERI, Jenm., n. sp.

FRONDS sub-prostrate, overlapping in growth, rooted at the base, and leafy thereto, dark-green, membranous, 1 to 1½ inch long, with alternate branches ½ to ¾ inch long; rachises stramineous, slender, hardly flexuose, angled when dry, branches about 1 line wide over the leaves, the primary and secondary being of nearly equal width; major leaves spreading horizontally, apart, or the outer ones contiguous, imbricating at the ends of the branches, oblong-lanceolate, ½ line long, ¼ broad, acute, inaequilateral, the upper base rounded and cordate, but not conspicuously expanded; copiously ciliate round the auricle, which overlaps the rachis; minor leaves apart on the primary rachis, but close on the outer one, slightly inaequilateral and subcordate, narrowly lanceolate, spinulose-pointed, ¼ line long; spikes flattened, 1½ line long, and nearly or quite as wide; bracts resupinate, lax, erecto-spreading, slight-ciliate-edged.

Trinidad; No. 194, *Herb. Trin.*; near S. Ottonia of Cuba. In form of frond and leaf it resembles albonitens, from which, however, it is readily distinguished by the short, flat spikes, long bracts, and freely ciliated leaves. The bracts which follow on the plane of the minor leaves are much enlarged, but those which follow the major leaves are not much reduced. Endemic. *G. S. Jenman, Demerara, October, 1897.*

THE BOTANICAL HISTORY OF THE UVA, PAMPAS GRASS AND THEIR ALLIES.

(Continued from p. 358.)

THUS we have in *G. saccharoides* and *G. argenteum*, two grasses, quite distinct in their mode of growth, and in their floral structure; one with a very marked, the other with a slightly indicated sexual dimorphism; one with a definite number of florets in each spikelet, and with a rachilla terminating abruptly with the second floret, the other with an indefinite number of florets, and with a rachilla gradually exhausting itself; one with two stamens, or staminodes, in each flower, the other with three. There may be further differences in the fruit; but I have not been able to find a single mature grain of *G. saccharoides*, as all those which I have seen proved imperfect on examination. However that may be, the differences as we know them, are certainly much more conspicuous, and much better defined, than those which separate, for instance, the allied genera *Phragmites*, *Arundo*, and *Neyraudia*. *Gynerium*, as represented by *G. saccharoides*, is, indeed, one of the best characterised and most natural genera of grasses, whilst it becomes at once vague and artificial if we allow *G. argenteum* and the other members of the group of which it is representative to remain in it. I propose, therefore, to retain the name *Gynerium* for the original species, and to exclude *G. argenteum* and its immediate allies.

The next question then is, which of the remaining species, described under the name of *Gynerium*, if any, have to go with *G. saccharoides*? The only species which come into consideration are *G. parviflorum* (Nees), and *G. arcuato-nebulosum* (Carr.). *G. parviflorum* was described by Nees from incomplete specimens collected by Martius and Prince Neuwied in Brazil. I have not seen them; but Doell, who examined the very material from which Nees drew his description, refers to it some specimens gathered by Gardner in Brazil, and by Sieber in Martinique. These were at my disposal. Yet I have been unable to find any difference between them and typical *G. saccharoides*. It is quite evident that Nees was misled by the imperfect state of the material, and that *G. parviflorum* is specifically identical with *G. saccharoides*, an opinion to which also Doell inclines. The other species, *G. arcuato-nebulosum* (Carr.), was described and figured from some panicles which had been sold in Paris for decoration; but neither the figure nor the description is sufficient to

enable the reader to recognise the genus or even the tribe. Some panicles, however, which M. Ed. André, of Paris, communicated to Kew as representing Carrière's *G. arcuato-nebulosum*, proved to be *G. saccharoides*. *Gynerium* is therefore, so far as we know, a monotypic genus; and I may add that—as the very copious material which I have seen shows—it exhibits also, throughout the large area inhabited by it, a remarkable uniformity so far as varietal differentiation is concerned. Without going into details with respect to distribution, it may suffice to remark that *Gynerium saccharoides* is a tropical plant, ranging from Southern Mexico to Paraguay and Southern Brazil, whilst the other so-called *Gyneriums* are confined to subtropical and temperate South America, or to the temperate regions of the mountains of tropical South America.

By confining the genus *Gynerium* to *G. saccharoides*, and omitting the *a priori* synonyms mentioned above, there remain still eleven species of our list for which we have to account. Two of them, *G. triaristatum* and *G. Wolfii*, Sodiro, are unknown to me; I must, therefore pass them over at present. Of the others, *G. argenteum*, Quila, speciosum, atacamenso, purpureum, roseum Rendatleri, and jubatum are so closely allied, that botanists taking a very broad view of the species would perhaps not hesitate to refer them to one species only. I will call them briefly the Cortaderas, "Cortadera" being the name by which they are generally known with the Spanish-speaking South Americans. *G. modestum* and *G. zeelandicum*, on the other hand, are doubtlessly distinct from each other, as well as from the Cortaderas. I intend, however, to confine myself in this article to the true Cortaderas, and reserve my observations on the two last-mentioned grasses for another paper.

The question is now, do the remaining species of *Gynerium* constitute a new genus by themselves, or are they referable to another already-known genus?

Gynerium argenteum was originally described as *Arundo dioeca* (Spreng., Syst. I. 361, non Lour.), and *A. Selloana* (Schult. Mant. 605); yet, as the definition of *Arundo* was then extremely vague, including grasses of very different structure, such as species of *Deyeuxia*, *Calamagrostis*, *Phragmites*, *Ampelodesmos*, *Stipa*, *Gastridium*, &c., this is perhaps of little importance, except in so far as it shows that there is a certain resemblance of *Gynerium* with *Arundo*. But what is *Arundo* in the modern sense, and in which relation do *G. argenteum* and its congeners stand to it? *Arundo*, in the sense of Benham & Hooker's *Genera Plantarum*—a conception which has been adopted by Hackel in Engler and Prantl's *Natürliche Pflanzenfamilien*, and by Baillon in his *Histoire des Plantes*—comprises four geographically distinct groups, namely, (a), one to three essentially Mediterranean species; (b), one species, ranging from India and the Malayan Archipelago to Madagascar and South Africa; (c), one or two species from New Zealand; and (d), a few species from South America.

The first group consists of *Arundo Donax*, with *A. Pliniana* (Turra) and *A. Mauritanica* (Desf.), forms which may be considered as specifically identical with *Arundo Donax*. This is the nucleus of the genus. The species referred to under (b), is *A. Reynaudiana* (Kunth), a very tall reed which Sir Joseph Hooker has shown to constitute a new genus, *Neyraudia*. The New Zealand species are *A. conspicua* (Forst.) and *A. Kakao* (Steudel)—probably synonymous with *A. fulva* (Buchanan)—which is very closely allied to *A. conspicua*, and may, in any case, be taken as identical with it for the purposes of this paper. We have seen that *A. conspicua* has been described as *Gynerium zeelandicum* by Steudel, and it agrees, indeed, in all essential points with *G. argenteum*, except that it is hermaphrodite. Apart from this sexual condition, it stands therefore in the same relation to *Arundo Donax*, as *G. argenteum*. Finally, the South American species, which the authors of the *Genera Plantarum* had in view, were *A. pilosa* (Urv.), *A. nitida* (H. B. K.), and probably some undescribed species in the Kew Herbarium. All these species are, however, dioecious, and should

therefore have been referred to *Gynerium*, in the sense of the *Genera Plantarum*. It may suffice to mention here that these South American grasses possess the same mode of growth which is characteristic of the Pampas-grass, although some of them are very much smaller, and that they differ chiefly in the structure of their valves, which are five- to seven-nerved, usually shortly acuminate, and distinctly awned, rarely mucronate.

Thus, nothing is left of the modern conception of *Arundo*, as the original nucleus, the familiar *A. Donax*, L., or the Spanish Reed; and the decision whether *G. argenteum* and its congeners are to be sunk in *Arundo*, or to be made into a new genus, depends solely on the comparison with *Arundo Donax* (in the broad sense). Taking *Gynerium argenteum* as representative of the Cortaderas, I will, as I did above, place the description of the essential characters of both grasses alongside, in two parallel columns; but as the vegetative characters of *Arundo Donax* are, on the whole, the same as those of *Gynerium saccharoides* (save the hollow culms, the smaller dimensions, and the absence of stilt branches in *Arundo*), I may refer the reader, with respect to them, to the comparative descriptions of *G. saccharoides* and *G. argenteum*, and confine myself, in this place, to the differences of the reproductive parts—

<i>GYNERIUM ARGENTEUM.</i>	<i>ARUNDO DONAX.</i>
<i>Dioecious</i> —spikelets dimorphous: dimorphism slight.	<i>Hermaphrodite</i> —spikelets all alike.
<i>Spikelets</i> —3- to 6-flowered, the uppermost florets more or less reduced, exceeding the glumes.	<i>Spikelets</i> —2- to 7-flowered, the uppermost florets more or less reduced, not exceeding the glumes.
<i>Rachilla-joints</i> and <i>callus</i> —long.	<i>Rachilla-joints</i> and <i>callus</i> —short.
<i>Glumes</i> —subequal, very narrow, linear, long, tapering, 1-nerved.	<i>Glumes</i> —equal, broadly lanceolate, shortly acuminate, 3- to 5-nerved.
<i>Valves</i> —lanceolate, produced into a very long and acuminate, 3-nerved, very scantily long-hairy, or glabrous in ♂, copiously hairy in ♀.	<i>Valves</i> —ovate to lanceolate-ovate, acuminate, finely and shortly blind, rarely entire, long-hairy near the base, with 3 excurrent primary, and usually with 2 to 4 short additional nerves near the base, the middle nerve often produced into a fine short awn.
<i>Pale</i> —equalling ½ to ¾ of the valve.	<i>Pale</i> —exceeding ½ of the valve.
<i>Lodicules</i> —ciliate.	<i>Lodicules</i> —glabrous.
<i>Stamens</i> or <i>staminodes</i> —3.	<i>Stamens</i> —3.
<i>Grain</i> —linear oblong; hilum linear, equalling about ½ of the grain, embryo equalling ½ to ¾ of the grain.	<i>Grain</i> —obovoid-oblong, broad, hilum basal, punctiform, embryo occupying almost wholly one side of the grain.

It will not be denied that the differences in the mode of growth, in the sexual conditions, and in the structure of the spikelets and the fruits, are quite equivalent to those differences on which the definitions of our generally recognised genera of grasses rest. The Cortaderas must therefore be considered as the representatives of a separate genus, for which I propose the name *Cortaderia*. *O. Stapf, Kew.*

(To be continued.)

VEGETABLES.

CAULIFLOWERS AND BROCCOLI.

ALTHOUGH there are numerous varieties of both Cauliflowers and Broccoli, and varieties which I should not care to be without, I am doubtful if we have more useful kinds than Early Erfurt, Walcheren, Autumn Giant, Self Protecting (Veitch), Snow's Superb Winter White, Penzance, Knight's Self Protecting, Ledsham Latest, Late Queen, and Methven's June. The above I have invariably found amongst the best I have as yet grown, and they serve to keep up a continuous supply. At the present time I am cutting firm heads of Autumn Giant, and Veitch's Self Protecting is beginning to turn-in, which it will do very rapidly. It is one of the best, for with care it is an easy matter to have this variety in good condition up to the end of the month of January, and occasionally still later; after which Snow's Winter White follows. It is a matter of importance to go over the beds of those varieties about to turn in, and dig up the plants when the heads are about the size of cricket-balls, and lay them in thickly together on a snug border, protecting the heads in severe weather.

t we have had no frost, and vegetation has not checked, and many of the young Broccoli for next year's supply have grown to a size than I like, but with smaller plants in store, all be safe in that direction.

nts growing under hand-lights and in frames d be kept abundantly aired—in fact, the lights d be kept off them night and day so long as it is

heads on those plants that are raised from seed sown in September and wintered in frames. The heads are fit for cutting at the end of May, and for this reason I should not like to discard this old method. Other matters which must not be overlooked are heavy manuring and deep culture, which always tell on light, shallow soils and dry seasons like those experienced of late years. The chief

n firm, moderately-enriched soil. I would not manure specially for this crop, but let it follow one that has been afforded a heavy dressing. If widely planted, this checks legginess, as does the comparative lack of manure in the soil; and if, in conjunction with these measures, the plants are heeled over to the north in the colder parts of the country, they will go through an ordinary winter without loss
H. Markham, Northdown, Margate.

SEQUOIA GIGANTEA.

This gigantic and elegant tree requires little comment, being now so well known and extensively grown in the British Isles; and so much admired by all lovers of arboriculture. A very fine specimen growing in the arboretum at Wrest Park, the beautiful Bedfordshire seat of Earl Cowper, has made rapid growth since the time it was planted. It was purchased from the late firm of E. P. Francis & Co., nurserymen, of Hertford, soon after the introduction of the plant into this country. It was then in a 3-inch flower-pot, and was afterwards shifted into one of a larger size. It was for a time used in house and conservatory-decoration. The late Mr. Snow, then gardener to the Earl de Grey, at Wrest Park, had it planted in the arboretum in the autumn of 1846.

Mr. Ford, late gardener at Wrest (who is shown as seated in the foreground of this magnificent and ornamental tree at fig. 110), at that time foreman-gardener under his uncle, the late Mr. Snow, at various times carried the plant from the gardens to the mansion, and *vice versa*; and assisted in planting it in the arboretum. This tree has now a height of 74 feet 3 inches, with a girth at the ground-level of 21 feet 3 inches; and at 3 feet from the ground, of 15 feet 3 inches. The branches extend from north to south 36 feet, and from east to west 35 feet. The soil is a sandy-loam, resting on a subsoil of strong clay, which to all appearances is very well suited to its requirements, as it is still making luxuriant growth, and remains feathered to the ground. *George Mackinlay, Wrest Park.*

COLONIAL NOTES.

ANTIGUA

"A BOTANIC station was established at Antigu in 1889, and a Superintendent of Agriculture was appointed to act as secretary of the Agricultural Society, and supervise the four botanic stations in the Leeward Islands. The superintendent was a highly-trained scientific man, who devoted himself with great earnestness to his duties, and who carefully investigated and suggested means for developing the agricultural resources of the islands. Numerous reports were prepared for general information, and 7500 pamphlets printed by government were distributed all over the Colony. These covered questions connected with the domains of botany, agriculture, geology, entomology, veterinary science, and allied branches. Investigations were also made into the diseases affecting Sugar-canes, and into the tick-disease in cattle. Experimental plots were started for the cultivation of new varieties of cane, and for testing the effects of manures in increasing the yield of Sugar. Numerous plants were propagated for distribution amongst all classes of the community, and detailed information furnished respecting their suitable cultivation. After a brief interval, the whole of this activity was suddenly stopped by the refusal of some of the members of the Legislative Council to pass the vote for the superintendent's salary, on the ground that the Colony could not afford it. The botanic station, in a crippled condition, has, it is true, been continued, but in an agricultural community requiring special scientific aid in these days of competition, and of disease affecting staple industries, the action taken by the Legislative Council was most unfortunate and inopportune, and it has tended to retard development in every branch of industry." *Report of West Indies Commission.*

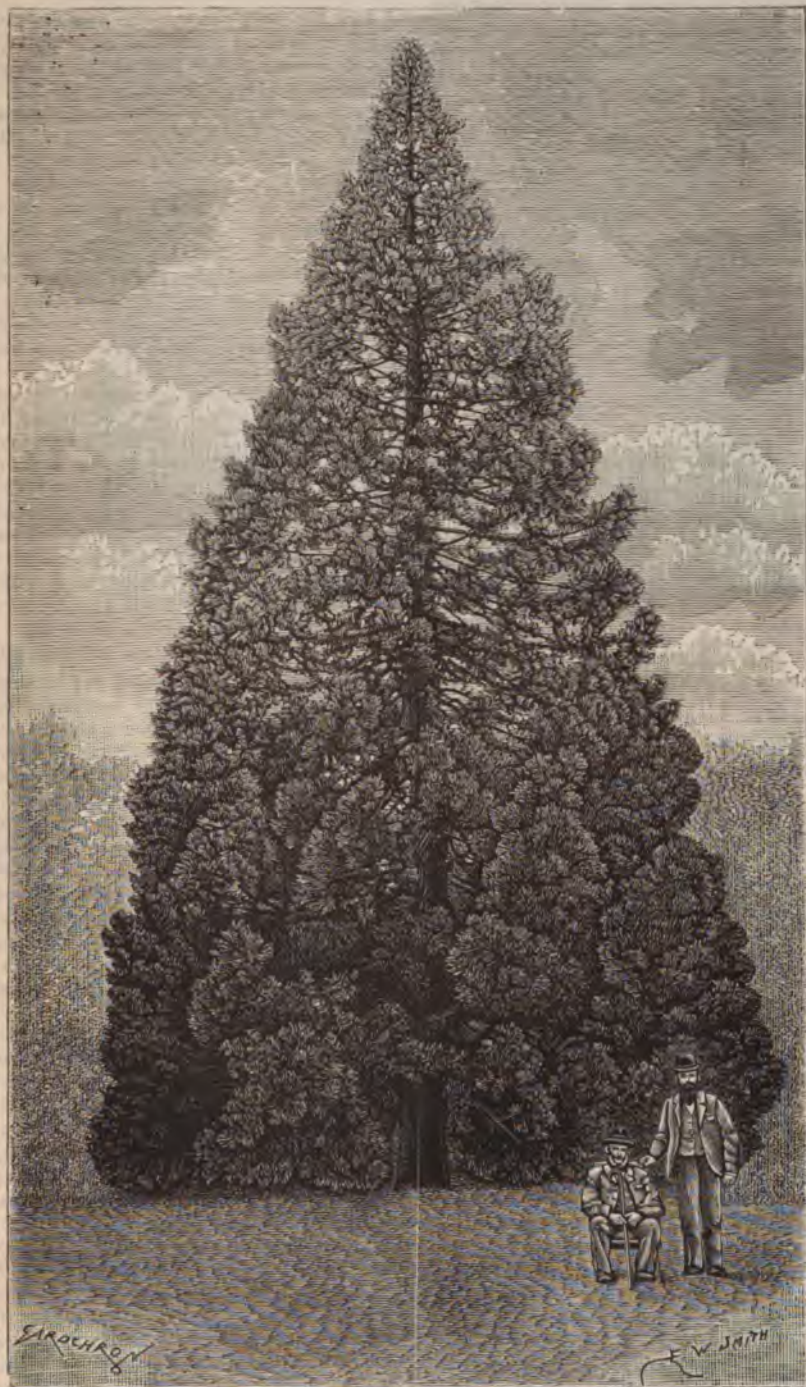


FIG. 110.—SEQUOIA (WELLINGTONIA) GIGANTEA AT WREST PARK:
HEIGHT 74 FEET 3 INCHES.

a few degrees of frost at this season doing no to Walcheren. Early London, &c., two lies I have always found excellent for ring under glass. Many gardeners dispense the September sowing of Cauliflower seed, ring to raise plants of the Erfurt type under in February, and, with care and attention in ming-off previously to planting them out, good ts are obtained. But I have fewer buttoned

part of the kitchen garden at this place consists of light loam resting upon the chalk. The Broccoli and Cauliflower quarters will be heavily manured, and, if possible, trenched several spits deep, and by planting-time the land will have settled, and require no other attention than to pass the draw-hoes over it, and take out rather deep drills at a distance of 2 feet apart.

Broccoli succeed in an open position, and planted

ST. KITTS.

"A botanic station was started at St. Kitts, close to the town of Basseterre, in 1890. The site was the best that could be obtained for the purpose, and as a well laid-out ornamental garden, and a place of resort for the congested population of Basseterre, it has not been unsuccessful. It has been the means of raising and distributing many economic plants, such as 20,000 Arabian Coffee, 5000 Liberian Coffee, and 1000 Cacao plants, while latterly some valuable new varieties of Sugar-cane have also been distributed. The cost of maintaining this station is exceptionally small, in fact less than that of any other station in the West Indies. It is desirable that iron gates should be placed at the principal entrances, and that the station, for the present, at least, be entirely under the control of the Administrator, and not under a board. On land almost adjoining the station, an experimental station for Sugar-canes was started; but as already mentioned, owing to the removal of the superintendent of agriculture, nothing has yet been accomplished of a practical character." *Report of West Indies Commission.*

ROYAL BOTANIC GARDENS, CEYLON.

The newly-appointed Director, Mr. J. C. Willis, intends to publish every six or eight weeks a series of small circulars dealing with agricultural, horticultural, and botanical topics, with special reference to the work carried on in the Royal Botanic Gardens. One such circular deals with the Cacao canker, which is practically confined to one variety, the old red Cacao of Ceylon.

BOTANIC GARDENS, SAHARUNPORE AND MISSOURIE.

The Annual Report for the year ending March 31, 1897, has been published. Mr. Gollon does not report favourably on the Arabian Date Palm, and speaks more decidedly against the Sacaline (*Polygonum sacalinense*), which it appears is a failure as a forage plant in this garden. Eucalypts and Sisal Hemp do well. Cox's Orange Pippin and the Moor Park Apricot do well in the hills; and the American Dew-berry is well spoken of.

WEEDS.

The following is the preamble of a Bill to be presented to the Legislative Assembly of New South Wales:—"A Bill to provide for the eradication and destruction, and for preventing the growth of noxious weeds, and to prohibit and regulate the importation of noxious weeds, and of articles which might spread their growth." It is recommended that the Government "offer a reward for the discovery of a cheap and efficient means of eradicating noxious growths."

QUEENSLAND.

I send you two photographs, one representing a Tea-bush, a row of which is growing alongside of a quarter of Sugar-cane, a New Guinea variety called McLean; the other shows sprays of Coffee in berry, and Tea placed upon three sticks of the same cane. As the cane to the tip of the leaf is about 12 feet long, a portion is cut from the base, and the top is necessarily above the "back ground." The Tea grows very well, but there is no chance of its becoming a commercial success, as the expense of picking makes that next to an impossibility; but I have no doubt Coffee cultivation will become a large item in the Sugar-cane farmer's programme. My trees have borne a great crop of "Cherry" this season, and are not all gathered yet; but notwithstanding the crop, it has not been equal to the demand for seed, and before twelve months are past, there will be a good many hundreds of acres planted in this district. The manager of a company that has started a plantation about 23 miles from here came in one day; he told me he had not seen such a crop in Ceylon. There was an idea among the farmers that a great deal of scientific knowledge was required to succeed in Coffee-growing, but by writing, and by teaching those that have called for instruction, and to see for themselves, I think the fear has about died out. Cane-growing and cutting is laborious work compared to which Coffee cultivation is play. For several years a

pony (such as can be bought here for 7s. 6d.) and a light scarifier, can nearly do the keeping clean, very little hoe-work being required. The cane farmer has to work hard for from twelve to fifteen months before he can bring his cane to the mill or railway-siding, perhaps from 2 to 4 miles, and then he gets from 10s. to 14s. per ton for it; but the coffee-grower's ton of Coffee in the parchment will bring him an average of a hundred pounds. Thirteen years ago, when I first came to the colony, and occasionally saw an isolated Coffee-bush growing, very healthy, and bearing great crops, I was convinced that the Mackay district was well adapted for Coffee-growing. It was evident that both soil and climate were right. The one drawback is, that there must be some capital to keep a man going for three years, when half a crop is generally got; but when cane and Coffee-growing are started together, the cane returns money in from twelve to fifteen months, and enables the farmer to tide over the waiting time—but where capital is in hand, the Coffee grower may go 50 miles away from market, where he can get land for 2s. 6d. per acre, and five years to pay it in. Two to four days' journey with his team will bring his year's produce to market; and unless some unforeseen calamity overtakes the industry, Mackay is likely to become in a few years a large Coffee exporting place. *D. Buchanan, State Nursery, Mackay.*

ORCHID NOTES AND GLEANINGS.

ORCHID PORTRAITS.

CATTLEYA TRIANGULARIS VARS. *YVONNE*, *RETA*, and *PRINCEPS*.—*Lindleya*, t. DLXXXIII.

CELOGLYSE ASPERATA, Lindley, Borneo. — *Lindleya*, t. DLXXXII.

CYMBIDIUM EUBURNI X *LOWIANUM*, Hort. Veitch. — Flowers white, anterior lobe of lip with a purplish band within the white margin. *Lindleya*, t. DLXXXVIII.

CYNORCHIS GRANDIFLORA, Ridley, see *Bot. Mag.*, t. 7564.

CYPRIPEDIUM INSIGNE VAR. *CITRINUM*. — A variety with the standard white at the upper half, yellow and brown spotted beneath, the other parts of the flower are nearly self yellow. *Revue Horticole*, October 1.

MILTONTIA VEXILLARIA VARIETIES. — *Lindleya*, t. DLXXX, DLXXX.

ODONTOGLOSSUM CRISPUM VAR. *MOORTEBEEKIENSIS*. — A magnificently spotted variety. *Lindleya*, t. DLXXXI.

ODONTOGLOSSUM LUTEO-PURPUREUM VAR. *CORNUTUM*. — *Lindleya*, t. DLXXXIV.

ONCIDIUM SACCODES VAR. *PUNCTULATUM*. — Lateral petals chocolate-brown, with a yellow margin; anterior lobe of lip broad, yellow, sprinkled with brown spots. *Lindleya*, t. DLXXXVII.

TAINIA PENANGIANA, Hook. f., see *Bot. Mag.*, t. 7563.

TRICHOPILOA SUAVIS. — *Revue de l'Horticulture Belge*, November.

OLEARIA FORSTERI.

The shrub or small tree of which we give an illustration (fig. 111, p. 381), is a native of the northern and middle islands of New Zealand. When seen out of flower it has much resemblance to some *Elaeagnus*, with its coriaceous, undulate, reticulate leaves, thickly covered with pinkish or cream-coloured down on the under surface. The slender cylindric heads are fascicled, and, what is singular, they mostly contain but a single floret (rarely two), so that the term composite is not strictly applicable. They have a delicious perfume, so that the plant may be commended to the notice of connoisseurs, especially to those resident in the southern and western counties—especially near the sea. Our specimen was grown in the garden of G. V. Hart, Esq., Q.C., Woodside, Howth, Dublin, and was kindly forwarded to us by Mr. Burbidge. We have no personal experience to offer, but the evidence before us justifies us in recommending this plant as likely to be valuable by the seaside. The plant is figured and fully described in Mr. Kirk's excellent *Forest Flora of New Zealand* (1889), t. 137. In New Zealand it is much infested with a dipterous insect which forms leafy galls in the buds, with the result that the flower panicles are enlarged whilst the foliage is reduced in size.

* *Olearia Forsteri*, J. D. Hooker. *Handbook of the New Zealand Flora* (1867), p. 127.

EDEN HALL.

THE Cumberland residence of Sir Richard Musgrave, Bart., is pleasantly situated in the valley of the Eden, some $3\frac{1}{2}$ miles from the picturesque little market town of Penrith on the L. & North-Western Railway, and 1 mile only Langwathby on the Midland route. Sheltered amid the Cumberland Hills, the Musgraves have, believe, found a home since the time of William the Conqueror, during which long period the place has passed in direct male succession.

The hall itself occupies a position immed inside a park of about 300 acres extent, and commands a magnificent view of both mountain woodland scenery. Approaching the hall from Penrith side we pass through the lodge-gates, and proceed along a broad, winding avenue substantially flanked on each side with stately timber, Oaks and Chestnuts being conspicuous for their size, narrow walk on the right brings into our view fine Larch-trees. Beech and Limes are also represented, but the most remarkable object is two giant Cedars of Lebanon (fig. 112 on supplementary sheet) growing side by side, near to what is called the French garden (fig. 113 on supplementary sheet) geometrical arrangement of flower-beds, immediately under the west front of the hall. We are unable to record the age of these twin-trees, but judging by noble dimensions and aged appearance, they have braved the storms of more than a century, who knows they did not spring up in the days of the good fairies, coming to drink to "The Lady of Eden Hall," lost their cup in the little well mysteriously hidden in the clumps of Boxwood observed on the left of the flower-garden under the terrace, and which is now preserved with religious care; for—

"If this cup should break or fall,
There goes the luck of Eden Hall."

Flower-gardening is carried out extensively and in a style completely in harmony with the surroundings. The French garden already alluded to laid out on gravel, the beds being edged with a work, and at the time of our visit, furnished with a rich assortment of suitable subjects, noticed amongst them being a pretty variety of *Begonia*, named *Fairy Queen*, a compact-growing variety with bronzy-coloured foliage, and carmine-red flowers similar in form to the type. Tuberous-rooted varieties of *Begonia* were also well represented, and were especially pleased to see our old favourite *ceolaria* (*amplexicaulis*) holding its own, and sending a striking contrast to a splendid *Heliotrope* growing alongside.

What pleased us most here, however, was the manner in which Mr. Smith, the gardener, had fitted out the centre and other beds conspicuous in the design; some idea of the effect may be realised when we say they were occupied by splendid examples of noble plants as *Lavatera arborea* variegata, *japonica* variegata, *Hyacinthus* (*Galtiana*) candida, a noble subject for massing, *Eucalyptus globosa*, *Lobelia* Queen Victoria, *Carnation* Ruby, *Scarlet Pentstemons*, *Veronica Andersoni*, *Spectabile*, *Dactylis elegantissima*, &c., all arranged with a view to preventing a flat and uninteresting appearance, and to form a connecting link, so to speak, with the general surroundings. Along the top of the terrace, in front of the hall, a series of oblong beds, similarly filled, occupy positions at regular distances on the grass, and a spacious border immediately under the terrace wall, clothed with Ivy, was a magnificent arrangement of tall Sunflowers, Dahlias, Tobaccos (*Nicotiana*), *Pentstemons*, *Chilian Beet*, *Calceolarias*, *Violas*, &c. *S* beds of large size below the hall, until recently, filled with evergreens, and, considering their dimensions, it was a great undertaking, with the facility at command, to furnish them with such plants as those already named, supplemented with clumps of *Coreopsis*, *Marigolds*, *Scarlet Gladioli*, and the like.

THE PLANT-HOUSES.

Leaving the flower gardens, and passing under a row of veteran Limes which effectually hides the



FIG. 112.—CEDARS AT EDEN HALL, CUMBERLAND. (SEE P. 380.)



FIG. 113.—FLOWER-GARDEN AT EDEN HALL, CUMBERLAND. (SEE P. 380.)

view a walled-in garden of something like $1\frac{1}{2}$ acre, in which is situated the bulk of the glass, we enter a range of plant-houses replete with a miscellaneous collection of plants, consisting largely of decorative subjects, both flowering and foliage. This department really consists of three separate ranges, the larger being filled with specimen plants, a considerable number of which are always required for the embellishment of the dwelling-rooms. Small plants are practically useless for this purpose here, and consequently specimen Palms of large size are numerous, Kentias predominating. Bamboos are also tensively used, and of these there were some noble

superba that literally festooned the roof of one of the stoves. Never have we seen this magnificent "trailer" in better condition than here. Orchids are not extensively grown, but *Calanthes*, because of their winter value, form an exception. We must not fail to mention the collection of about 1000 *Chrysanthemums*, and the winter-flowering *Begonias*. Violets are specially well done here; those we saw, indeed, were perfect examples of good health, and full of promise for a generous harvest of bloom. *Marie Louise* and *Neapolitan* are the varieties chiefly grown at present. Zonal *Pelargoniums* in the semi-double class are prepared in large numbers for winter

the time we saw them, were exceedingly fine, both in respect of size of bunch and berry, as well as finish. A start has been made to renew the Vines, and a young lot of canes planted twelve months ago looked very promising. A houseful of young Figs about the same age were also looking well; and Bananas were exceptionally promising—one plant in particular carried a wonderful cluster of fine fruit.

Melons are given a special share of attention. The varieties *Model*, *Best of All*, and a cross of Mr. Smith's own raising named *Sir Richard*, are the favourites. The latter, a green-flesh variety, combines with exquisite quality a beautifully netted



FIG. 111.—OLEARIA FORSTERI: HARDY SHRUB. (SEE P. 380.)

specimens of *aurea*, *violacea*, and *gracilis* coloured *Dracaenas* also find favour for the same purpose, as do *Acalyphas*. *Caladiums* are an imported feature during the summer season. *Crotons* are represented by clean, well-coloured plants of such varieties as *Queen Victoria*, *Prince of Wales*, *Weismanni*, *Aigburthensis*, &c.

Amongst flowering subjects, good plants of *Anthurium Andreanum* were conspicuous objects with their handsome spathes; *Eucharis grandiflora*, and *Pancratiums* of sorts are grown in large numbers, and in healthy condition. *Allamandas Hendersoni* and *Williamii* were also full of bloom; and ere we forget, we must pay a tribute to the glorious *Gloriosa*

flower, and a small house full of *Gardenias* bristling with short-jointed, sturdy shoots gave promise of a fine quantity of bloom. Forcing plants, such as *Lily of the Valley*, *Lilacs*, *Spiraeas*, bulbs of sorts, &c., are also extensively used, and a batch of the maximus variety of *Helleborus* showed that its value is also known.

THE FRUIT-HOUSES.

Making for the fruit department, we passed into a lean-to range of considerable dimensions, three of which houses are devoted to Grapes. The *Hamburghs* were all but finished, though there was sufficient evidence of a heavy crop left, and very creditable they were. *Muscat of Alexandria*, hardly ripe at

appearance, and what is of still more importance, a constitution so vigorous that as many as a dozen fruits of good size may be obtained from one plant, each ripening off in its turn, a very unusual characteristic in a Melon so far as our experience goes. Something like 2000 *Strawberries* are grown in pots. Considerable alterations are contemplated in the hardy fruit department, more especially amongst the wall-trees. Some young *cordon Pears* planted a year ago indeed have already made a good start.

With a large establishment to cater for, vegetable culture necessitates a great deal of attention; and the area devoted to these, with fruit-trees interspersed, amounts to about 3 acres. Though space compels us to

be brief in our remarks on this department, we should be remiss did we omit to acknowledge the thoroughly practical methods adopted to secure a good supply; ample evidence we recognised in the total absence of vacant ground, large breadths being devoted to winter Brassicas of various sorts in successional stages. It may be worthy of remark that *Stachys tuberosa* is much esteemed as a winter vegetable here, and is consequently grown in considerable quantity. *A Correspondent.*

THE ROSARY.

ROSES, WHAT TO PLANT, AND HOW TO PLANT THEM.

(Concluded from p. 361.)

I PUT at the head of this article, how to plant them, but I hardly know how to go on with this subject. I have before me the little brochure issued by the National Rose Society, "Hints on Planting Roses," where the whole subject is entered upon with such minuteness of detail, that I think the veriest tyro could not well make a mistake about them. There are two points on which beginners may make a mistake, viz., the depth at which they are to be planted—I allude to dwarf Roses. I would not recommend any beginner to try standards. Care should be taken that the point of junction should be buried about an inch beneath the soil, so as to give the Rose a double chance. Another point is, firm planting. When the Rose-plant is placed in the hole prepared for it, some soil should be put in, and then firmly trodden down, of course taking care that the roots are not injured. These are the two main points to be attended to in the planting of Roses; but again I would say to every one who wants information on the subject, consult the little book above alluded to. To those who have space for it, the grouping of Roses, that is, the putting a large number of one kind into a separate bed, has a most pleasing effect; but then, of course, space is required for this, and those for whom these remarks are intended are not likely to have much at their disposal. They cannot do much for effect, but I think it is well to vary the colours as much as possible in the beds—not to have all reds in one place and all whites in another, but to disperse the colours up and down the beds. The present autumn is one of the most remarkable I can recollect since I began to grow Roses. Generally at planting time our beds are saturated with moisture; but in this part of the country (East Kent) the ground is so dry one has to water, and it is so hard that I am told the shrubs and fruit trees can only be got out of the ground by using a pickaxe. How it will fare with our poor Roses I know not. We have had a splendid time for ripening the wood; but if, as some imagine, this spell of dry weather and high temperature by night and day is to be followed by severe cold, it is likely that they will suffer much. But we must hope on, and do all we can, if the severe weather comes, by mulching and protection to save our pets from injury. *Wild Rose.*

BOOK NOTICE.

HARDY PERENNIALS AND OLD-FASHIONED GARDEN FLOWERS. By John Wood (Upcott Gill, pp. 330).

THE object of this book is to furnish the names and descriptions of really useful and reliable hardy and perennial plants, together with cultural hints on each plant, for, says the author, "to be able to grow a plant well is of the highest importance, and the first step towards a full enjoyment of it." We endorse the first proposition entirely; and though we think the facts might have been differently expressed, we shall not quarrel with the author's intention in the second. Perhaps the author is too exclusive in his taste when he condemns the bulk of the Michaelmas Daisies, and has not a good word for *A. acris* or "Robert Parker." Surely Mr. Wood cannot have

availed himself of the report of the trials of these plants conducted at Chiswick. So with *Campanulas*, only five or six are named, whilst *C. isophylla*, *C. carpatica*, *C. turbinata*, and many others are not mentioned. Only one *Chionodoxa* is alluded to. Mr. Wood, like many others, is successful with the lovely *Gentiana scabra*; but we know of gardens where, in every possible variety of soil and aspect, the plant cannot be induced to produce its flowers. Mr. Wood's cultural notes are very serviceable, and his book is sure to be useful to amateurs. Missprints, such as *Orygalis* for *Orgyalis* suggest that in a future edition the proofs should be read by a competent botanist.

FLORISTS' FLOWERS.

"MRS. R. JONES" CHRYSANTHEMUM.

LAST spring I bought in some new Chrysanthemums, and one of them was Mrs. R. Jones. A plant of this variety at the present time, although growing in an 8-inch pot, has three splendid blooms, the largest being fully 9 inches in diameter, and 5½ inches deep. I prefer the variety to any other white that I have grown, and am rather surprised not to have seen it more frequently among winning stands at shows this year. I have also plants of Western King which have very good blooms, but it is rather too compact to please everyone. In Mrs. R. Jones the medium between great looseness and compactness is found. *A. J. Long, Wyfold Gardens.*

THE WEEK'S WORK.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Drogheda, Maidenhead.

Herbaceous Borders.—During the continuance of mild dry weather, the re-arrangement of the occupants of these borders, as may be called for by the clumps having become much too large or outgrown their allotted space, may be carried out. The better method is to lift all of the plants in the border, laying them meanwhile temporarily, and trench and manure it. After allowing the soil time to settle, make it firm by tramping it evenly and regularly; and then in dry weather proceed to arrange and set out the various plants or convenient sized pieces of the same, preferably the outer portions of such clumps. New borders may be made and planted at this season if put in hand forthwith, whereas if left until the spring the ordinary routine work will often prevent the performance of the work. If the work be carried out at the present season, and the border at the finish be mulched with leaf-mould or Mushroom-bedding, the plants will make some degree of progress underground, starting strongly in the spring; whereas spring-planting always involves late starting into growth, and to a certain extent late flowering. Moreover, the spring is too late for bulb planting or bulb removal.

Rose Borders.—The treatment of impoverished borders was dealt with in a former Calendar, but where it is not necessary to take radical measures, a heavy dressing of half-rotted manure will suffice, this dressing acting also as a protection against frosts, if allowed to lay on the surface till the spring, when it may be pricked in, or covered with fresh soil. Although the pruning of Roses should be performed in March and April, strong growths should be shortened back at this season so as to avoid having them broken off by wind or snow, causing the loosening of the plants in the soil.

Lobelia cardinalis.—These plants may be left to winter in the beds if they are afforded a light covering of bracken or litter in frosty weather. This is the simplest means of wintering them; but if an increase of the stock of plants is desired, it is better to lift the entire stock and store them in a greenhouse-pit, dividing and potting them in early spring. The same holds good if, owing to the position of the bed, they cannot be afforded protection where they grow.

Window-boxes, &c.—Owing to the mild weather, and the protection afforded by the window, the summer occupants of the boxes have continued in a fairly bright condition up to date of writing; but it is quite time, notwithstanding this, to replace them with the winter shrubs, bulbs, &c. The shrubs may consist of the varieties enumerated for filling winter bedding, the other plants being Wallflowers, *Myosotis* in variety, variegated and green *Vincas* &c.

Bulbous Irises.—The planting of these beautiful species should not be longer delayed, the bulbs deteriorating if kept out of the ground after this date. These varieties of the Spanish and English Irises, whose usual season of flowering is June and July, should always be grown if a succession of Iris is desired; their handsome colours and quaint shapes vieing with those of Orchids. These species like a rather light and friable soil, and a warm sunny position; and if the soil be impoverished, a good dressing of rotted stable-dung, or failing that, one of leaf-mould, should be afforded, and the ground dug 1 foot deep. If the bulbs are most likely to be the case, are planted in little colonies in a border of herbaceous perennials, these directions should still be carried out. Let the ground be consolidated by tramping it, and proceed to plant the bulbs, which may be put 4 inches deep, and 1 or 2 inches apart if planted in patches of a dozen or more bulbs. The Spanish Iris (*I. xiphium*) naturally starts rather the earlier into growth, and flowers a week or two before the so-called English Iris (*I. xiphoides*), and for furnishing out flowers the former is, perhaps, the more desirable. The prevailing tints are blue, purple, and violet, but there are pure white and yellow varieties; the variety Gold Cup being a very distinct one, with rich bronzy-purple tints; Lady Blanche and La Vestale are pure white; Jupiter and Canary Bird are of shades of yellow, and Celestial has light blue flowers. The bulbs may be bought in mixture of colours at a reasonable price. The English Irises partake somewhat of the character of the others, but they are of slightly dwarfier growth, as well as a little later in blooming, and can therefore be grown so as to make a succession to the Spanish varieties. The same methods of culture apply to each. The flowers possess great variety of colour, and contain pure white, lilac, blue, and purple tints as selfs, or variously mottled. Collections of bulbs in distinct colours may be purchased for a few shillings, and mixed colours are even cheaper. In the event of frost making it inconvenient to plant in the open, these bulbs may be potted to the number of five in a 6-inch pot, and stood in cold frames, or plunged out-of-doors in cocoanut-fibre refuse, or coal-ashes, till the spring, at which season the bulbs may be transferred without disturbance to the borders.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorset.

Pleiones.—Few of the smaller-growing Orchids are more beautiful than the Pleiones, familiarly known as Indian Crocuses, and more correctly as *Calanthes*. They are not only valuable decorative plants, but they are very useful for furnishing out flowers; and if amateur Orchid-cultivators knew better the ease with which the plants may be grown, doubtless many more gentlemen would grow them. The following varieties are worth places in any collection:—*Pleione lagendaria*, *P. concolor*, *P. Wallichiana* or *præcox*, *P. maculata*, and its variety *alba*. The plants are now passing out of bloom, and it may be noticed that the part enclosing the flower-stem is the growth which will be formed into plump bulbs, and this time next year carry flowers. When the flowers fade, these young green shoots commence to push out from their base a number of small white roots, and no time should be lost before re-potting the plants. Turn them out of their pots or pans, removing most of the old soil, and cut off all dead roots, pulling out the old decayed bulbs. Instead of dividing the pseudo-bulbs, and bedding them out, as is often practised, repot them in clumps just as they are. At no time during the past eight years have Pleiones been divided here at Burford, and at each flowering season, when the varieties are grouped together, they have always been a picture of loveliness. My method is to grow them in 6-inch pots, with the bulbs almost touching each other; and when repotting I take away those bulbs which may have grown beyond the main clump, and make up another potful in the same way as the older examples. It is immaterial whether pots or shallow pans are used, excepting that pans are best where stage-room is limited, as they may be suspended from the roof. Whichever be used, ample drainage must be given to carry off the large supplies of water these plants require when in full growth. Over the crocks it is necessary to place a layer of sphagnum-moss, or a thin turf of loam, with the grass-side downward, so that the compost may be kept moist, and the drainage unobstructed by soil. Then fill nearly up to the rim of the pot with the following compost: equal parts of fibrous

loam, peat, and sphagnum-moss, with a moderate quantity of coarse silver-sand. Upon this soil the base of the clump should rest, filling up firmly around the bulbs with the compost. Should there be any bare spaces between the bulbs, it should be filled in with the roughest of the potting material, giving preference to the sphagnum-moss as being retentive of moisture. When repotting is finished, place the plant near the roof-glass in an intermediate-house, but give scarcely any water until the plants start to grow vigorously. As the roots and foliage develop, so must the quantity of water afforded be increased, and when thoroughly established, the plants require almost unlimited supplies; and in addition to the ordinary watering, an application of weak liquid-manure water about once a week is very beneficial to them. In the spring and summer months, the plants will be greatly benefited, and red-spider may be checked, by syringing overhead and underneath the foliage two or three times a day. *Pleione Hookeriana* and *P. humilis* coming from a high alpine region, at elevations ranging from 7000 to 10,000 feet, should at all times be grown in the cool-house with the *Odontoglossums*. Both species have now completed their growth, and may be suspended close to the glass. During their period of rest, water them often enough to prevent the bulbs from shrivelling. The flowering season is January and February. *P. humilis* has sepals and petals of a delicate lilac colour, the lip is margined with white, and exquisitely fringed with long white hairs. *Pleione* flowers are easily gathered by giving them a gentle pull, when the stem will readily part from the base of the growth. When in bloom, the plants should be placed in a dry atmosphere, and the flowers will remain fresh for a considerable time.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, late of Eastnor Castle, Leicestershire.

The Pine-stove.—In the fruiting-house some of the older Smooth Cayenne Pines will now be getting ripe, and in order that they may ripen satisfactorily, and be of good flavour, water must be very sparingly applied to them, and not any excepting the soil is very dry. Let the air be kept rather drier, with a steady warmth of 70° at night, and 80° by day, with sunshine. Afford the plants very little air, then only on fine days for an hour or so about noon. Other fruits that may be swelling may have a little guano or other fertiliser sprinkled on the soil before affording water, or it may be dissolved in the water used. Be careful in affording water to any of the plants at this season, when there is but little loss of moisture from the soil. Let the walls, &c. be moistened with weak liquid-manure occasionally, and with clean water once or twice daily; and secure the fruits with broad strips of matting in order to have erect crowns.

Successions and Suckers should now be resting, and beyond an occasional examination to see that they do not become very dry at the root, they will not require much attention. Let the night temperature be kept at about 60°; 5° lower will not harm them, should very cold weather set in. If the garden is near a smoky town, the glass should be washed occasionally. Frigid-domo or canvas blinds are very useful in economising fire-heat, but they must not be let down till nightfall, and should be rolled up by daylight, or half their usefulness will be counteracted and lost.

Pot Vines.—Where these were started at a very early date, the buds will be commencing to break, and if they are doing this in a regular manner, the canes may be shifted from the horizontal position, and slung up to the rafters for a few days, about 2 feet from the glass, and then secured to the trellis in the proper manner. By proceeding thus, the risk of checking growth is much reduced. Canes that break irregularly may have the terminal buds rubbed off, so as to divert the sap into the backward buds. As the Vines grow, more water at the root will be required; but root-action being sluggish as yet, care must be taken that the Vines do not suffer from excess of moisture, neither must they lack moisture. Maintain the hot-bed at a steady degree of warmth, affording fresh warm material as often as required. The syringing of the rods may be suspended for a time when they commence to break, as the points of the shoots are liable to damp at this time of year, which means, of course, that the bunch therein will be spoiled. A moist, genial atmosphere may be kept instead by damping down twice or thrice daily. Whenever the Vines have to be afforded water, it should be in sufficient quantities to moisten the entire mass of soil, and have a warmth of 85°. The

night temperature may now be raised to 60°, and by day to 70°, the temperature and the degree of moisture being governed to a great extent by outside conditions, a rule which, if more generally adhered to, would tend to reduce the red-spider pest so common on early-forced plants.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Luton Hoe Park, Luton.

Richardias.—There should now be plenty of spathes on such of these as were kept in pots all the summer, and the pots being filled with roots, it will be safe to afford them weak farmyard manure-water once in three or four days. The *Richardias* that were planted out in the open with the idea of furnishing spathes late in the winter, will have begun to fill the pots with roots, and establish themselves, and they should be placed in a greenhouse, and fumigated at regular intervals for the destruction of greenfly, with which they are nearly always liable to be infested. When spathes in quantity are wanted at the Christmas season, the more forward of these should be placed in a house having a slightly higher degree of warmth, say 50° to 55° by night, and 60° by day.

Hydrangea hortensis.—The plants should now have the protection of a cold frame, and the pots be plunged to the rims in fine coal-ashes or new tree-leaves, leaving space for the air to circulate freely among them.

Fuchsias.—Those plants which have been employed in the conservatory, and have passed out of flower, should be stood close together in a frost-proof glasshouse or well-lighted shed for the winter, water being withheld all the while.

Chrysanthemums.—The season is almost here when the propagation of the plants must begin; and while there is yet a little time, an effort should be made to ascertain if every plant is correctly named. Those which are pushing up many shoots should have the latter thinned somewhat, in order to strengthen the plant, and the shoots which are to serve as cuttings. Any varieties that appear unlikely to develop shoots should be cut down to within 1 foot of the soil forthwith, the surface slightly stirred, the exposed roots covered with soil, and the plants stood near to the glass in a greenhouse, and afforded water only when the soil has become dryish.

Violets.—Thus far the season has been favourable to *Violets* in frames, and flowers are now abundant. Such of the beds as were top dressed with Cocoa-nut-fibre refuse may not be found to require water, but unmulched beds may be found to require it. This should be applied without the rose on the can, so as to avoid wetting the leaves. Continue to ventilate the frames freely, pushing the lights back for an hour or two each day, or until it is seen that the underside of the glass is quite dry. Remove decaying leaves as soon as remarked, and place protecting material in readiness to cover the mats if sharp frost is impending.

THE KITCHEN GARDEN.

By W. H. POPE, Gardener, Highclere Castle, Newbury.

Manuring Land and the Rotation of Crops.—Advantage should be taken of dry weather to wheel manure on to the kitchen-garden quarters and borders; but, before doing this, it is necessary to prepare a plan of the cropping for, at the least, one year in advance. For instance, plants of the *Brassica* tribe should not be grown on the same soil for two years running. Peas and Beans should also have change of ground; and by arranging the different crops to follow each other, better results may be looked for, not only by husbanding the resources of the soil, but by more economy in working it, than by following the opposite method. After a root crop, the ground should be well manured, and dug deeply at an early part of the year, the surface being left as roughly as possible, or thrown up into ridges. The exposure of so much of the soil in this manner will cause the destruction of numerous larvae and chrysalides of insects, &c., injurious to crops. The early Celery-crop may be followed by the main-crop of Onions, the ground being ridged or roughly dug as fast as it is cleared; the mid-season and later Celery-ground being reserved for Beetroots, Parsnips, Carrots, &c., no other manure being added beyond a dressing of soot in the spring. Late varieties of Potatoes may be succeeded by Kale, and Coleworts for spring-cutting, the plants, of course, being prepared in a measure by having been lifted from the seed-beds, and pricked out thinly to keep them sturdy. Of course, there are different subjects, as summer Spinach, Lettuces,

Radishes, and many others for which it will not be necessary to manure the land in an especial manner. Spinach for instance may be sown between rows of Peas, or as an edging close to the paths; it is an evanescent crop, never occupying the ground in the summer for more than six or seven weeks.

Early Broccoli.—If the rows of Peas are placed 20 to 30 feet apart, early Broccoli may be planted in the spaces between the rows, the removal of the Peas letting more air and light into the quarters. If Peas are given 6 feet between the rows, two rows of plants may be put in each space, and if the ground be trodden hard so much the better for the Broccoli. The ground occupied by late Broccoli not falling vacant till the end of May, should be reserved for the Scarlet and other Runner Beans and for Celery, the rows of the former being 10 to 12 feet apart; and between them the mid-season and late Celery may be planted, the rows running north and south; or Turnips, Dwarf Beans, &c., may be grown there. Wide and deep trenches should be provided for the Beans, and plenty of rotten manure mixed in the staple, with some fine soil put on the top, before sowing the seed. Lettuce is best provided for during the summer months by planting or sowing a batch at short intervals on the Celery-ridges, as also early Endive, Radishes, or other quick-growing subjects.

Vegetable Refuse, &c.—In all gardens there is a heap of decaying vegetable refuse and other rubbish, the accumulations of the summer months. This ought now to be turned, the decayed portion thrown into a heap by itself, the rougher materials being burnt, and the resulting ashes added to the heap, then add a sixth part of quick-lime, and well mix all together. Thus treated, it forms a valuable fertiliser, and will be found useful for many purposes during the spring and early summer.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Manuring Strawberry Plantations.—Advantage should be taken whenever the ground is hard and dry to wheel manure on to the Strawberry-beds, and to spread it between the rows and close up to the plants. The manurial ingredients in this dressing, which may be about 2 inches thick, are carried down to the roots of the plants by snow and rain, benefiting them without the attendant loss of roots that follows the common practice of forking the manure into the spaces between the rows. Weeds that may have sprung up in the beds should be pulled up before applying the dressing.

Pruning Currant-bushes.—The established bushes of Red and White Currants may now be pruned, cutting most of the lateral shoots within an inch of the old wood, but leaving the leading and secondary leading shoots of branches about 6 to 9 inches in length, according to position. This conveys the general idea of the pruning of these bushes, but the pruner must also have in his mind's eye the symmetry of each, leaving shoots of varying length, or removing some entirely, where it may seem to be called for. All crowding of the shoots or main branches should be avoided or remedied. Old bushes in a crowded condition may be turned into profitable ones by thinning out the older and worst-placed branches, and shortening in the fruit-spurs if these are of great length. If the branches are lichen-covered, scrape them with a hard-wood scraper, and strew quick-lime over the others whilst damp. This dressing is useful in other ways, injurious insects and the larvae often concealed in the lichen being likewise destroyed by it. Black Currants require that some of the older branches be removed annually, and an equal number of shoots of the current year, of uniform strength, left to take their places; weak wood, unless needed to increase the size of the bushes, being removed. This done, and the prunings removed to the fire-heap, a good dressing of short manure should be forked into the ground, between and around the bushes. Gooseberries are pruned in the manner advised for black Currants, leaving the centre of the bushes well opened out. Where bullfinches are troublesome, the pruning of the Gooseberry bushes should be delayed until growth begins, by which time the birds will have done their worst, and the pruner will then have buds on the shoots from which to select. When pruning bushes of any sort, any of the shoots which are likely, when in leaf and fruit, to droop too near to the ground, should be shortened or removed.

Wall-Trees.—The pruning and training of wall-trees should be pushed on with during open weather—in accordance with the advice that I gave on subject on November 6, p. 325.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR DECEMBER.

SATURDAY,	DEC. 4	{ Society Française d'Horticulture, London Isle of Wight Horticultural Society, Meeting.
TUESDAY,	DEC. 7	{ National Chrysanthemum Society's Winter show in the Royal Aquarium, Westminster (3 days).
TUESDAY,	DEC. 14	{ Royal Horticultural Society's Committees.
SATURDAY,	DEC. 25	—Christmas Day.

SALES FOR THE ENSUING WEEK.

MONDAY,	Nov. 29	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Japanese Lilies, Palm seeds, &c., at Protheroe & Morris' Rooms. Fruit Trees, Evergreens, and Conifers, at Lee's Nursery, High Road, Ealing Dean, by order of Messrs. Chas. Lee & Son, by Protheroe & Morris (two days). Bulbs and Plants, at Mr. Stevens' Rooms.
TUESDAY,	Nov. 30	
WEDNESDAY,	DEC. 1	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Roses, Fruit Trees, Border Plants, and Bulbs, at Mr. Stevens' Rooms.
THURSDAY,	DEC. 2	{ Dutch Bulbs at Protheroe & Morris' Rooms. Bulbs, Plants, Shrubs, Palms, &c., at Mr. Stevens' Rooms.
FRIDAY,	DEC. 3	{ Dutch Bulbs, at Protheroe & Morris' Rooms. Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—41.3°.

ACTUAL TEMPERATURES:—

LONDON.—November 24 (6 P.M.): Max., 47°; Min., 37°.

PROVINCES.—November 24 (6 P.M.): Max., 52°, south-west Ireland; Min., 39°, north-east Scotland.

Weather dull, foggy, and mild.

A PAPER at the Royal Horticultural Society from Mr. JOHN WRIGHT of the *Journal of Horticulture*, who is not only an experienced judge, but a member of the press, which is the great Court of Appeal, is of great interest to those concerned in the preparation of schedules. No doubt Mr. WRIGHT's experience is like our own. We find that most of the difficulties and disputes which arise, and which are referred to us, depend either upon faulty drafting of the schedule, or upon a misapprehension of its meaning. Incompetence on the part of a judge scarcely ever occurs, though, of course, equally competent judges may some-

times come to different conclusions. Wilful misjudging has never come under our notice. In continental shows a bias has, in our experience, sometimes been observable; but then it has been a bias of an amiable character, and one that has not inflicted injury on anyone.

The rules of judging formulated by the Royal Horticultural Society furnish valuable assistance to the framers of schedules, and it is to be wished that those rules were made the universal standard, as they can be revised each year, and modified if change be considered necessary.

The point system is excellent in all doubtful cases, but as to the value to be given to 1st, 2nd, or 3rd prizes, as the case may be, that is a question that the judges have nothing to do with. The maintenance of a regular proportion between the classes may be desirable in most cases, but it is possible there may sometimes be local reasons which induce a committee to act otherwise.

Competition for the mere sake of getting money-prizes is despicable, little if any better than gambling, and leads to such deplorable results that many employers forbid their gardeners to exhibit. The higher the aim, the less personal the object, the better is the show, and the better the ultimate results to all parties concerned. It may be difficult to realise this at the time, but experience shows it to be true in the long run. It would be interesting to trace the causes that led to the abandonment of some societies. For our own part, we feel convinced that one cause of the want of success of such societies is to be found in the fact that the supporters thought more of personal interests and of prize-giving and prize-winning than of the progress of gardening. At any rate, it is incontestable that the most successful societies are those which place the interests of gardening foremost, and the benefit of its members or of exhibitors in a subordinate position.

Commencing with an unqualified testimony to the good effect of horticultural exhibitions, Mr. WRIGHT referred to the features of successful and unsuccessful societies, afterwards giving hints upon the management of a society. Reference was made to the composition of committees, the importance of establishing a reserve fund, the formation and compilation of schedules, the amateur question, the duties of exhibitors, of secretary, committee, judges, &c., and many other incidents in connection with the exhibition of horticultural produce.

One of Mr. WRIGHT's principal references was that to a system of judging exhibits known as "the point value" method, and which has been practised at the Carshalton Society's Show for some years. Briefly, under this system a sum of money would be apportioned to each class, and it would be awarded to 1st, 2nd, or 3rd prize exhibitors, according to the number of points awarded each collection by the judges. The amount of disparity between each prize in a class would be exactly proportionate to the difference between the value of the several exhibits. Occasionally, therefore, there would be little difference even between the 3rd prize and the 1st prize.

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, December 2, 1897, at 8 P.M., when the following papers will be read, viz., 1, "On the Anatomy of *Caudina coriacea*," by Professor ARTHUR DENDY, D.Sc., F.L.S., &c.; 2, "On some Desmids from the United States," by Messrs. W. WEST, F.L.S., and G. S. WEST. Exhibitions:—1, Specimens of Galls of *Cecidomya*, by Professor J. B. FARMER, F.L.S., &c.; 2, An Egg of *Eobidna*, by Mr. MARTIN WOODWARD.

RAMIE FIBRE.—Messrs. MACDONALD, BOYLE & Co., of 39, Victoria Street, S.W., write in reference to a note on "Ramie Fibre," that appeared in these pages recently, that we must have been misinformed. The Midlands Spinning Co., of Long Eaton, have been working Ramie under their process for the past four years, and tons of the yarn have been turned into lace and other materials.

CHRYSANTHEMUM PENNSYLVANIA.—A bloom of this variety of incurved Japanese Chrysanthemum has been shown us by Messrs. F. SANDER & Co., who obtained it from the raiser, HUGH GRAHAM, Esq., U.S.A. It is bright yellow in colour, has ribbed, rather broad florets that incurve, and are slightly turned to one side. The bloom is 4½ inches deep, and 5½ inches in width, and has a full and rather dense centre. The flowers appeared rather rough, but having been cut so long, it would be difficult to estimate it correctly.

BEGONIA GLOIRE DE LORRAINE.—The numerous occasions on which this beautiful fibrous-rooted Begonia has been exhibited recently, have proved it to be one of the most valuable of autumn-flowering plants. It responds to good cultivation by producing pretty, well-shaped plants, that are literally covered with abundant rosy-pink flowers. The collection of plants, shown from a private establishment, and referred to in our report on p. 386, of the Royal Horticultural Society's Show on Tuesday last, was a most noteworthy one.

HONINGTON CHURCHYARD.—On Monday, October 18, the Bishop of Coventry consecrated a handsome lych-gate and a new burial-ground at Honington Church, the gift of F. TOWNSEND, Esq., of Honington Hall. The ceremony was rendered the more touching by the fact that a funeral was about to take place on the new burial-ground of the only son, aged five years, of Mr. GUY, the head-gardener at Honington Hall.

HEAVY BUNCHES OF GROS GUILLAUME GRAPE.—Under the more common but erroneous name of Black Baroessa, Mr. NELSON, gardener to Mr. BARNES, a gentleman residing at Chesterfield, exhibited three bunches of this fine-looking Grape at the recent Birmingham Chrysanthemum show, the heaviest of which weighed 9 lb., and the others nearly as much. The bunches and berries were perfect in every point. It is a variety of a very uncertain character, cropping well in some places, and scarcely at all in others; and when a few bunches only happen to grow on a vigorous, large Vine, they usually come of prodigious dimensions. Mr. BARROW, in his *Vines and Vine Culture*, says that the Vine does best on the long-rod method of pruning. Mr. ROBERTS, gardener, of Charleville Forest, Ireland, exhibited in 1877 a bunch of Gros Guillaume weighing 23 lb. 5 oz.; and Mr. McKenna, gardener at Phoenix Park, Dublin, showed a bunch of 20 lb. weight; see *Gardeners' Chronicle*, 1886, Feb. 6, p. 168.

BRITISH ENTERPRISE?—At this season of the year, particularly, we receive very numerous English business catalogues, and a large number of Continental and American lists. The Continental lists, especially the German and the Dutch, are either wholly written in English, or a translation of the vernacular is given, so that a young gardener desirous of improving his knowledge of foreign languages might do worse than take these catalogues as a useful aid. This, of course, is not the primary object of these lists. Their main aim is to convey information to potential purchasers, and so the compilers adopt means to bring the descriptions of what they have to offer for sale under the notice of their customers in the easiest way, without inflicting on them the trouble and loss of time involved in translating. In many cases our Continental friends take the trouble (which must be great to them) of making use, for our benefit, of our senseless system of weights and measures, and our incoherent money tables. No doubt the foreign merchants find it remunerative to take all this trouble, and it is really very

ind of them to do it for us. What surprises us is that our business men so rarely do the same; indeed, we do not remember to have seen a seed or plant catalogue from a British firm in any other language than English, nor one in which the prices and quantities were expressed in terms that would be readily intelligible outside his country from one end of Europe to the other without the trouble of translating or calculating.

THE EFFECTS OF EARTHQUAKE ON TREES.—Two or three correspondents of *Indian Gardening* say that since the earthquake in June the fruits on their Papaw-trees have not increased in size nor ripened, but remain in the same state as before the earthquake. New growth, however, and a fresh crop of fruit has been produced since the catastrophe, leaving the previously-formed fruit arrested.

SALPICHRON RHOMBOIDEUM.—Under the name of Muguet des Pampas (Lily of the Valley of the Pampas), M. GERARD, in the *Revue Horticole*, speaks of a Solanaceous plant called under the above name, and erroneously under that of Withania origanoides. M. GODEFROY-LEBEUF writes of it as a highly ornamental hardy climber, fit for covering trellises and the like, suitable for towns, for the country, for the seaside, for all descriptions of soil, and for all aspects. The berries are about an inch long, oblong shape, and of a whitish colour—whence the popular but paradoxical name “Œufs de Coq” (Cock's eggs).

ACREAGE OF CROPS IN THE UNITED KINGDOM.—According to the Returns of the Board of Agriculture, the following is the total acreage of the United Kingdom, including the Isle of Man and Channel Islands, and of the crops therein cultivated during the present year, 1897:—

Acres.	
77,671,319	... Total area of land and water.
47,888,653	... Total acreage under all kinds of crops, bare fallow, and grass.
3,390,092	... Corn crops.
4,337,568	... Green crops (including 1,194,194 Potatoes).
4,152,796	... Clover, sainfoin, and grasses under rotation.
27,924,710	... Permanent pasture or grass, not broken up in rotation.
46,995	... Flax.
50,869	... Hops.
7,345	... Small-fruit.
405,282	... Bare fallow.

ALGERIA.—We take the following from a letter in a recent number of the *Times*:—“What is the condition of Algeria? The Sugar-cane has no sugar, it is inferior Bamboo. The Coffee-berry is empty. The cotton is too short for spinning. The cocoa-Palm is incapable of bearing fruit. The Indigo plant comes to nothing. The Pine-apple does not ripen. A hot-house is necessary for the Vanilla. Of spices we had better not speak; there is nothing here to compare with Brazil or India. And for European products it is still worse. Corn becomes hard in the third year; a mealy Potato is a myth. Oxen in the fourth generation dwindle from 300 kilogrammes weight to 150 lb. Fowls are poor; fruit wormy, even the Banana being pesty. True, there are a few good Oranges; but the wine is harsh and rough, the sugar of the Grape not being capable of being entirely converted into alcohol and carbonic acid. In short, there is a rebuff all along the line.” This unfortunate condition of affairs is attributed by the writer to the temperature, which is always too cold or too warm, or not cold enough and not warm enough.

Mr. JAMES SIMPSON, late of the Royal Horticultural Society's Gardens, Chiswick, has received from Mr. T. McMEIKEN, Falkland Park, South Norwood, an appointment on his tea plantations in Assam. Mr. SIMPSON entered the service of Messrs. JAMES COCKEN & SONS, nurserymen, Aberdeen, as an apprentice, and during his apprenticeship he (in 1893) received the Royal Horticultural Society's Certificate for Examination in Horticulture. During his stay in the Royal Horticultural Society's Gardens, he was for more than two years Honorary Secretary and Treasurer of the Chiswick Gardeners' Mutual Improvement Association, and held the South Kensington Science and Art Certificates in Mathematics, Drawing, and Botany. Mr. SIMPSON left for Assam on the 12th inst.

PUBLIC PARKS OF NEW YORK.—A brochure by GHERARDI DAVIS, containing information read before the New York Historical Society last April, concerning the establishment of public parks in the city of New York, is of considerable interest as a record of progress. Formerly, the need for open spaces as recreating grounds in the centre of large towns, was scarcely thought of; of late years it has received much attention. The foundation of the bowling-green, of Battery Park, City Hall Park, Madison Square, and the other open-spaces in New York, as well as the development of these pleasure-grounds, are dealt with in the little book before us. To quote from it, “New York may well be proud of the work done by the Park Department during the past twenty years, for the care which the commissioners of that department have bestowed upon our park system.”

GREENHOUSE HEATING.—“One cubic foot of gas per hour will maintain a rise of 1° Fahr. for every 450 square feet of glass on a calm day with no wind, but at least double this power must be provided for windy weather. The average working practice is 1 cubic foot of gas per hour for every 300 square feet of glass, and one-third of this extra for exposed outside walls. Greenhouses heated by gas are frequently worked so as to be very unnecessarily expensive. It may be taken, as a rule, that no plant-house heated by gas should be kept at a higher minimum than 45° Fahr. If this is strictly observed, the time during which the heat is required will not average, in the Midlands, more than a total of six to eight weeks per annum. If a higher temperature is kept, the extra gas required for the same period is not a serious matter, but the time during which the heat is required is enormously increased; a minimum of 55° would extend the time to nearly six months, and a minimum of 70° would mean hard firing, day and night, for almost the whole of the year. Inattention to this important point means excessive cost, and consequent discarding of what, under reasonable conditions, would be found a great pleasure and convenience. *The Commercial Uses of Coal Gas.*”

WOLMER FOREST AS A SANCTUARY.—Mr. THOMAS WHITBURN, President of the Guildford Natural History and Microscopical Society, writes from 36, High Street, Guildford, under date Nov. 4:—“Owing greatly to the approval of the Press, the question of the preservation of Wolmer as a sanctuary for birds is assuming national importance, and it may perhaps interest your readers to know that the petition, numerously signed by influential residents here, including some distinguished military officers familiar with the Wolmer district, will shortly be submitted to the heads of the Department of Woods and Forests for their consideration. Among those whom I have interviewed on the subject is the renowned and venerable artist, G. F. WATTS, R.A. On a visit which I paid him on Wednesday afternoon at his house, known as Limner's Lease, which he has erected some 3 miles from Guildford, near the village of Compton, he expressed warm sympathy with the movement, and said that it gave him great pleasure to sign the petition. He also, as indicating his thorough appreciation of the aims of the Guildford society, has allowed his name to be connected with it in the same manner as that of Mr. GLADSTONE—namely, as hon. member. Thus the Guildford Natural History Society can boast of the rare distinction that two of the most eminent men of the century have signified their emphatic approval of its endeavours, and given it the valuable prestige of their support.” *Times.*

VICTORIA MEDALISTS.—The last issue of the *Gardeners' Magazine* contains a double-page plate containing the portraits of all the Victoria Medalists. The likenesses are so generally good, that we congratulate our contemporary on its enterprise.

PLANT PORTRAITS.

CUNILA MARIANA, Lindl., *Mechan's Monthly*, November.
 ROSA CALOCARPA, Garden, November 13.
 ROSA HUMILIS, Garden, November 13.
 ROSE MRS. SHARMAN CRAWFORD, H.P. (Dicksons), *Rosenzeitung*, October.
 ROSE VICTORIA MELITA, *Rosenzeitung*, October; hybrid Tea; pale primrose (Lambert).

HOME CORRESPONDENCE.

THE WELLINGTONIA IN CO. WICKLOW.—The County of Wicklow is noted for the numerous fine specimens of the newer Conifers, which find a home on the sunny slopes, or in the sheltered glens of its mountain ranges. In the mild and genial climate of Ireland they seem to thrive about as well as they do in their natural habitats, on the Pacific slope of North America, and on the richly-wooded hills of far-away Japan. Fine examples of the Wellingtonia are met with in almost every domain around the numerous country seats, from Coolatrin in the south, to Powerscourt in the north, both of which are famed for their fine collections of exotic Conifers. The older and best-grown trees have in many instances reached a height of over 70 feet, with straight massive stems, often girthing, at 5 feet up, 10 to 11 feet. Two remarkably fine specimens, perhaps the finest in the county, are growing on the lawn at Fassaroo, the seat of Richard M. Barrington, Esq., about 2 miles from Bray, in the extreme north of the county, and at an altitude of some 150 feet above the level of the Irish Sea. The soil is a friable loam, of good depth, resting on an open sub-soil, and the spot is fairly well sheltered. The trees are in splendid health, straight and shapely, and richly clothed with branches from top to bottom, where they sweep the greenward. These fine trees were accurately measured this autumn, and their dimensions were found to be as follows:—No. 1, planted in 1857, height, 77 feet; girth of the stem at 5 feet up, 6 feet 3½ inches; at 3 feet up, 10 feet 2 inches; at the base, 14 feet 10 inches. No. 2 stands near to No. 1, and was planted in 1859. Its height is 73 feet, girth of the stem at 5 feet up, 11 feet 4 inches; at 3 feet up, 12 feet 7 inches; and at the base, 16 feet 9 inches. Two noble trees for any lawn, and few finer specimens are seen in any part of Britain. *D.* (See p. 379.)

AGARICUS PROCERUS.—In these days of fungus forays, can any of your correspondents tell me if they have seen of late years many of the *Agaricus procerus*? It used to be tolerably abundant in a rough pasture here, but it has been very scarce of late, and this year has not appeared. Its characteristic form, and the peculiarity of its ring, make it a very distinct species; and in delicacy of flavour and substance, it, to my mind, far surpasses the common Mushroom, *A. campestris*, of which we have fewer than usual this year, but what we have had were extraordinarily large—Horse-Mushrooms, as the country people often call them. *R. Milne-Redhead, Clitheroe.*

EARLY NESTING OF A ROBIN.—It may be of interest to your readers this week to note that in a stable adjoining the gardens here a robin has recently built a nest, and deposited five eggs—a most unusual occurrence. *H. Warren, Aston Clinton, Aylesbury.*

ROSES.—When provoked by the absence of reference to fragrance in your publication on the subject of Roses, I wrote (as published in your issue of July 3) about fragrance in Roses deserving, or rather requiring, separate sections in nurserymen's catalogues, for varieties possessing this attribute, on account of the great preponderance of numbers of modest admirers that would primarily look for fragrance as the first attribute. I had hoped that, on their behalf, the discussion would have been extended. But I presume your journal has numbers of subscribers who are exhibitors of Roses, and that their number far exceeds that of the more modest class (?), so that nothing came of it at the time. I am therefore doubly pleased to have such a valiant ally in the least expected quarter, viz., “Wild Rose,” in your last week's number, outstripping, at a bound, my comparatively humble suggestion by seriously proposing that non-fragrant Roses be suppressed. Certainly! whole measures are best. I make bold therefore to suggest also that Roses of the graceless stiffness of the Baroness Rothschild class should by our hybridisers be sought to be replaced by grace in habit, so that with fragrance combined we may strive to arrive at perfection for the whole class. I will remember a severe rebuke received from one of the first Rose-growers of the realm on my ordering, some fifteen years ago, a fresh selection of new Roses, if his firm would only send such as were severely fragrant—the reply being to the effect that they had no time for such triviality! Why should not the National Rose Society agree to offer special prizes for collections of the greatest fragrance, and as “Wild Rose” proposes, not award any honours to Roses

deficient in perfume. Surely fragrance is the poetry of the Rose, as "Wild Rose" aptly suggests. *H. H. R., Forest Hill.*

CARNIVOROUS SLUGS.—Would it not be better to call these "worm eating slugs?" *Testacella haliotidea* (to which my experience is confined, for no one has asked me to name *T. Maugeli*) may be proved to be worm-eating by immersing them in weak salt and water. Dr. Ball records that "by putting them into spirits they disgorged more of these animals than I thought they could possibly have contained; each worm was cut, but not divided, at regular intervals." I fancied this cutting had been done by the horny jaw in the upper part of the mouth, which most Limaces have. But Mr. Ralph Tate asserts that this and other predaceous pulmonifera "do not possess horny jaws." This wants investigation. Mr. Tate also says that, "The food of the young *T. haliotidea* consists of small worms, and the white slender vermiform animals which live upon putrefying vegetables." *W. T., Bishop's Teignton.*

THE IRISH HEATH, which the older botanists know as *Menziésia polifolia*, was, according to Mr. W. J. Bean, changed in 1834 to *Daboecia polifolia*, because the plant was known in the west of Ireland as St. Daboo's Heath. Surely the generic name ought rather to have been *Dabécia*, not *Daboecia*! *W. T., Bishop's Teignton.* [The *Index Kewensis* retains the original but incorrect spelling. It does not adopt the anterior name *Borretta* (1790), which has lately been revived. In our opinion, it is best to take the *Kew Index* as the standard, and to leave to monographers the onus of changing nomenclature, even if we know it to be incorrect. *Ed.*]

THE MILD AUTUMN.—It is interesting to read the reports from different parts of the country on the mildness of the weather. Things are much the same here in south Worcestershire. We have been up to this date picking well-ripened Tomatoes from plants growing on the garden walls. Kidney Beans, Vegetable-Marrows, Dahlias, Gladiolus, and many tender annuals are beautifully in flower in the borders; and there are Strawberries of good size on some of the early varieties, but these fruits are not likely to ripen, the air being very humid. The mean temperature of October was 50.3°, which is 4° above the mean for that month here. The mean of the maximum readings was 58.0°, and that of the minimum 42.7°. The highest day reading was 65.7° on the 17th, and the lowest night reading 33.0° on the 6th, the lowest registered here this autumn. These readings are from the screen and Kew-tested thermometers. The rainfall was 1.33 inches, which is below the average. The day temperature of the present month has ranged between 44.9° and 60.9°, and the nights from 37.2° to 53.3° up to the 15th inst. The lawn grass is still growing, and will need mowing if the weather should continue mild. Since the above was written, we have registered 1° of frost. *W. Burgess, Bredons Norton.*

— *Plants in bloom at Shirenewton Hall, Chepstow.*—*Plumbago* *Larpenæ*, *Rudbeckia* *subtomentosa* and *speciosa*; *Asters* *Thomsoni*, *bessarrabicus*, *horizontalis*, and *Mrs. Thielton Dyer*; *Geranium striatum*, *Endresii*, *Robertianum*, *R. album*, *Chrysanthemum latifolium* *Duchess of Abercorn*, *segetum*, and *leucanthemum*; *Hypericum olympicum*, *Campanula isophylla*, *Celsia arcturus*, *Erigeron mucronatus*, *Tritoma Uvaria grandis*, *Choisya ternata*, *Althæa Baldwinensis*, *Hydrangea japonica*, *Anemone japonica pallida*, *Tradescantia virginica*, *Bidens tripinnata* and *grandiflora alba*; *Tagetes pumila erecta*, *T. patula*, *Jasminum nudiflorum*, *Lobelia erinus*, *Salvia coccinea* and *patens*, *Ligustrum japonicum*, *Arbutus Unedo*, *Spiræa Barmaldæ*, *Agrostemma coronaria*, *Cheiranthus Harpur Crewe*, *Godetia The Bride*, *Mignonette Victoria*, *Golden Queen*, and *Mecanopsis cambrica*; *Gynurum argenteum*, *Achillea Millefolium*, *Ruta graveolens* *variegata*, *Primula vulgaris* (both yellow and white), *Lavandula spica* (Glasnevin form), *Borago officinalis*; also *Roses*, *Antirrhinums*, *Calceolarias*, *Corn-flowers*, *Helichrysums*, *Ten-week Stocks*, *Carnations*, garden *Peas*, *Polyanthus*, *Violas*, *Violets*, *Fuchsias*, *Laurustinus* (single and double), *Daisies*, and *Dahlias* (show, fancy, single, Cactus, and hybrids). I have never recorded so many as late as November 22. We have had no frost severe enough to cut Dahlias. *E. J. Lowe.*

FLOWERS STILL BLOOMING IN THE PEAK.—*Shirley Poppies*, *Cornflowers*, *Mignonette*, *Candy-tuft*, *dwarf and tall Antirrhinum*, *Dahlias*, *Helichrysus monstrosum*, *Lavatera rosea splendens*, *French Marigolds* (dwarf and tall, in abundance), *Tagetes pumila*, *Godetias*, *Nasturtiums*, *Convolvulus minor*,

Viscaria, *Eschscholtzia*, yellow *Marguerites*, *Anemone japonica*, *Hollyhocks*, *Gladiolus Brechleyensis*, *Chrysanthemums*, *Pentstemons*, *Carnations*, *Pansies*, *Violas*, and *Roses* in profusion. I may add, the gardens here are about 900 feet above sea-level, and most of the flower borders are facing east. Many of the above species of flowers I am still cutting for decorative purposes. *C. B., Eyam, Derbyshire, Nov. 22.*

LAW NOTES.

RATING OF HORTICULTURAL PROPERTIES.

THE case of *Ayers v. The Dartford Union Assessment Committee* was heard recently at the West Kent Quarter Sessions.

Mr. Castle said the points upon which the appeal was made were based mainly upon the interpretation of the Agricultural Rates Act, 1896, and the question for the Court to determine was, whether, under the recent Agricultural Rates Act, appellant was not entitled to be assessed for his greenhouse property at Sutton-at-Hone, at a lower rate than the Assessment Committee had seen fit to impose. The property in question existed on certain land in the parish of Sutton-at-Hone, and comprised fifty-nine glasshouses belonging to the appellant, Mr. Ayers. Now, the question was, what was the amount to put on the property at a valuation such as would represent a proper value? The figures put on were £201 and £194, and these sums it was contended should be reduced to £201 11s. gross, and £140 net; off that other sums should be taken, and that, on the ground of the appeal, should reduce the totals to £193 gross and £132 net. The real question now with regard to the glasshouses was, whether the rating should be on the basis of 6 per cent. and 4 per cent., or 7½ per cent. and 5 per cent.

Mr. James Benjamin Slade, F.S.I., a member of the firm of Protheroe & Morris, auctioneers, &c., 67 and 68, Cheapside, E.C., was first called. He said he had had a long experience in valuing, selling, and letting horticultural properties, extending over a period of twenty years. Dealing with property of the kind in question was a special feature of the firm's business. He had made a survey of Mr. Ayers' property, and had checked the plan showing how the houses were laid out. He had made a careful inspection of all the houses, with a view to arriving at the value of the property. To get at the structural value, he adopted the principles and custom of his firm. He produced a statement showing the details. The structural value of the glass-houses he set down at £2998 11s., or in round figures £3000. The actual ground covered was 94,889 square feet. He made allowance for pathways between the houses, and thus brought the total ground covered to nearly 3½ acres. His valuation he brought out at £193 gross, and £132 nett. In making his calculations he looked rather more at the nett than the gross. He had come to the conclusion that it would be an impossibility to let the nursery at more than 4 per cent. net on their structural value, the tenant doing the repairs. That would work out at £132, and that, in his opinion, was the best rent that could be obtained; and if Mr. Ayres wanted to let, the probability is that he would have to wait a considerable time before he got a tenant. It would not be possible to get more rent than that.

Mr. Dickens: Would it not be possible to get £185?

Mr. Slade: No. It would be absolutely impossible. The keenness of the competition has much to do with the valuation. It is common knowledge that the Channel Islands have considerably forced the hands of the British horticulturist. Grapes are being sold now 66 per cent. less than they were ten years ago. It comes to this, that market gardeners will have to bring themselves to sell their Grapes at 1s. per lb. before long, or else give up the business of growing them altogether. Difficulties are increasing every way; there are great difficulties with regard to railway transit, although in the district under notice the London, Chatham & Dover Railway do their best. It has been proved to be cheaper to bring goods from France to London than from Swanley to London.

Cross-examined by Mr. Dickens: Witness said there were fifty-nine glasshouses; the last was built in 1891, and the first in 1886. A landlord would have to be satisfied, if he wished to let, with 4 per cent. on his outlay for greenhouses. A glasshouse was of no real value to anyone excepting those who had a proper use for it. There was more risk attaching to such a thing than to a house or factory.

Mr. Dickens: Then that being so, a man would expect a higher percentage to make up for the risk?

Mr. Slade: Well, he would not get it. Continuing his evidence, witness said he had put the structural value of the greenhouses in round figures at £3000. Whatever way the same property might have been valued by others, he claimed that the manner in which he had carried out his valuation was the correct one.

Re-examined by Mr. Castle: Witness said he adhered to his statement that it would be very difficult to get more than 4 per cent. His figures were supported by his estimate, and he was corroborated in the neighbourhood as to what had taken place. He could refer to property belonging to Mr. Nash. In his opinion £140 would be the full letting value of the property in question if it was in the market. He had had ample experience in that direction. Four years ago he valued the whole of the nurseries in the Bromley Union, comprising seventeen parishes, and this year he had been engaged on twenty cases in Brentford.

Mr. William George Cooke, A.R.I.B.A., P.A.S.I., of 85, Walbrook, a surveyor under appointment of the Board of Trade,

said he had inspected the property forming the subject of that appeal. He made his total value £3200. He worked on the 6 per cent. scale to get the gross annual value. The total gross value he put down at £201, and the total net value at £134. There was a cottage in connection with the property, but that was assessed separately.

Mr. Ayers, the appellant, was called. He produced the accounts for the last seven houses he built. The amount came to £80 8s. 8d.

For the respondents it was submitted that the assessment by the Dartford Union Assessment Committee was a fair and just one.

Mr. William Eve, F.S.I. (W. Eve & Son, 10, Union Court, Old Broad Street, E.C.), stated that he had been thirty-nine years in practice. He had gone carefully into the matter in detail, and had measurement taken of the various buildings, and plans prepared showing sections of the greenhouses. He estimated the rateable value of the glass erections and trade buildings, with 3½ acres of land, £209 10s., as follows:—

59 Greenhouses	£190 0
Well, Wind Motor, Reservoir, and Pipes	£10 0
Packing Shed, Wagon, and Empty Shed	£10 0
Stable	£70 0
Land, 3½ acres	£10 10
	£290 10

He considered that 5 per cent. on the structural value was the proper way to estimate the net rateable value.

The Court, after a brief deliberation, allowed the appeal with costs, and reduced the assessment to £235 gross and £159 net. The Justices agreed to state a case for the opinion of the High Court on the question as to whether or not market or nursery-gardens, with glasshouses erected on them, are to receive the allowance of 50 per cent. off the rates in accordance with the provisions of the Agricultural Rates Act, 1896. *Condensed from the "Estates Gazette."*

DENDROBIUM CŒLOGYNE.

THIS remarkable species was described by Reichenbach in the *Gardeners' Chronicle*, February 4, 1871, p. 136, and from that time to this, probably not twenty collections can boast of having had a plant of it. A specimen was exhibited by Messrs. Hugh Low & Co., of Upper Clapton, at the Royal Horticultural Society on Oct. 23, 1894, and this served as a model for the accompanying wood-cut (fig. 114), which shows the somewhat awkward habit of the plant. The flowers, which seem to be produced singly from the apex of the pseudo-bulb, are by no means small for a *Dendrobium*, although they present a different aspect from most of the larger-flowered kinds. They are greenish-yellow in colour, the inner surface being decorated with rows of deep purple lines and blotches. The large three-lobed lip is marked in the same way, but is of a conspicuous satiny brownish-black colour, and the column, which is shown between the two narrow projecting petals, is streaked with purple. One of the chief peculiarities of this species consists in its creeping rhizome, on which the old angular bulbs are about 2 inches apart. The plant is a native of Moulmein, and, like so many other Orchids of that region, was discovered by the Rev. C. Parish. *John Weathers.*

SOCIETIES.

ROYAL HORTICULTURAL.

NOVEMBER 23.—An ordinary meeting of the committee of this Society took place at the Drill Hall, James Street, Westminster, on Tuesday last, in most unpleasant weather. The atmosphere was laden with fog throughout the day, varying in degree a little at different periods. The hall was only imperfectly illuminated by gas, and the colours of the flowers, as described in the report below, are as nearly correct as we could estimate them in such circumstances. The display upon entering might easily have been mistaken for a *Chrysanthemum* show, exhibits of this popular flower absorbing so much of the space occupied. Of the six Awards of Merit granted by the Floral Committee, five were to *Chrysanthemums*. Orchids, however, are ever present, and this Committee were not without subjects presented for examination. Beyond these there were groups of *Begonias* and *Euphorbias*, each of which were exhibits of excellent culture. Two collections of Apples, and one of large Onions, a new Apple, and a new Grape, were the principal exhibits before the members of the Fruit Committee.

Floral Committee.

Present: W. Marshall, Esq., chairman; and Messrs. C. T. Drury, H. B. May, R. Dean, Geo. Stevens, Jas. Hudson, Thos. Peed, R. B. Lowe, H. J. Cutbush, J. D. Pawle, Jas. Walker, C. E. Shea, Charles Blick, Hy. Turner, R. M. Hogg, and Chas. Jefferies.

Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nursery, Chelsea, exhibited a few plants of *Begonia* *Mrs. Heal*, a figure of which may be seen on reference to the *Gardeners' Chronicle*, p. 585, vol. xviii., 1895. The variety was obtained from a cross between *B. socotrana* and a tuberous-rooted variety. *B. Mrs. Heal* commences to grow about July, and flowers until Christmas, in an intermediate house. The plants shown afforded evidence of its deco-

relative value at this season. The flowers are scarlet, or rosy-scarlet. Messrs. VITCH also showed a new Begonia named *Julius*, obtained from a similar cross: in this case the tuberous parent was a rose-coloured variety. *B. Julius* has double, bright rosy-pink flowers, very pretty in bud, and adaptable for button-hole adornment. It is free flowering, and has deep green foliage (Award of Merit).

Messrs. W. CORBUSH & SON, Highgate, London, had a group of *Palma*, and a number of seedling varieties of *Fernettia mucronata* (Silver Banksian Medal).

Messrs. HUGH LOW & CO., Clapton and Bush Hill Park

Tunbridge Wells, who had an exhibit of fifty plants or more. These were in 5-inch pots, and varied from 1 to 2 feet in height had retained their foliage well, and carried very large bright coloured bracts. This group was encircled with a few dwarf decorative plants (Silver Banksian Medal).

Mr. A. TULLER, Swanley, showed sprays of a semi double scarlet-flowering zonal *Pelargonium*, described as a sport from *Raspall Improved*. It is brighter in colour, and the flowers are larger than those of that well-known variety.

Bunches of a white-flowered single *Chrysanthemum* were shown by Mr. H. BACKER, Jersey. The flowers had suffered

antherum Mrs. H. Folkes, shown by Mr. H. Folkes, gr. to C. E. STRACHAN, Esq., Hemel Hempstead. It is a large, rather flat flower, pure white, with stout stems that require no support.

Twelve blooms of incurved *Chrysanthemum* Mrs. W. C. Egan were shown with others from Mr. R. OWEN, Maldenhead. The flowers are pale-coloured with white centre (Bronze Banksian Medal).

Mr. N. MOLYNEUX, gr. to J. C. GARNIER, Esq., Rookesbury Park, Fareham, obtained the Society's Award of Merit for his seedling Japanese variety, *Mary Molyneux*. This has been described frequently. The three blooms exhibited on this occasion were very large, but inclined to be rough.

Mr. W. J. GODFREY, Exmouth, Devon, showed several *Chrysanthemum* novelties, including *Lady Northcote*, white Japanese, assuming colour with age; *Mrs. Peabody*, an incurved; *Mrs. Molling Grant*, reminding one of *M. Chenon de Leché*, but different in colour, being pale reddish. Mr. GODFREY also showed several varieties of winter-flowering *Carnations*, and some cut blooms from *Sweet Pea*, var. *Celestial*, cut from a plant growing in a very exposed situation.

Mr. H. J. JONES, of the Ryecroft Nursery, Lewisham, made a most tasteful exhibit of cut *Chrysanthemums*, appropriating for this purpose one of the long central tables in the Hall. There was a great number of flowers in this exhibit, but no mass of colour. Some of them were displayed in handsome vases, others in stands and similar devices. The boxes, however, were not obtrusive, owing to a skilful disposition of pretty *Palma*—*Cocos Weddelliana*, and *Ferns*, which also served to break up and relieve the mass of flowers. Some of the varieties shown were the following, and it will be seen that many of them were novelties: *Mons. Deblanc* (incurved), *Western King* (represented in several dozens of good blooms), *Mrs. G. W. Palmer*, *Mrs. R. Jones*, *Yellow Madame Carnot*, *Australia*, *N. C. S. Jubilee*, *Mrs. A. H. Wood*, *W. Wright* (a very fine dozen), *Ma Perfection*, and *Duchess of Fife* (both incurved), and many unnamed Seedlings (Silver-gilt Flora Medal).

Another large exhibit of *Chrysanthemums* was one from Mr. W. WELLS, Earlswood Nurseries, Redhill, Surrey. This exhibit was a most representative one, and included varieties of every type. Three Awards of Merit were also made to varieties in Mr. Wells' collection. These were to *Georgina Pitcher*, Japanese, extra wide florets, slightly incurved, occasionally twisted, and pleasing shade of yellow. To *Scaramanga*, a large and very deep Japanese flower, pale reddish colour and buff; and to *Mrs. F. A. Bevan*, one of the most delicately coloured Japanese *Chrysanthemum* flowers, medium size, of good depth, florets very smooth, and flowers generally of a refined appearance.

Some late-struck plants of the variety *Scaramanga* in 6-inch pots were also shown, bearing blooms almost large enough for exhibition. Amongst a number of other varieties in this collection, the two most deserving of comment are *Earlswood Beauty*, a white, single-flowered variety, of first-class value, and *Madame Feriot*, a very fine white incurved flower (Silver-gilt Banksian Medal).

A collection inclusive of about forty bunches of *Chrysanthemums*, was shown by Mr. A. H. RICKWOOD, gr. to the Dowager Lady FREAKE, Fulwell Park, Twickenham, and a Silver Banksian Medal was deservedly awarded.

An exhibit of floral arrangements suitable for the embellishment of the dinner-table, made by Mr. L. H. CALCUTT, Fernbank Nursery, Fairholt Road, Stoke Newington, N., was awarded a Silver Medal. The display was intended to illustrate certain flower stands made of gold-coloured, twisted wire in the form of arches and other devices, some simple, others more elaborate. Generally, they were light and pretty, the simpler stands especially.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. JAS. O'BRIEN (Hon Sec.), De B. Crawshaw, S. Courtauld, T. Statter, H. Ballantine, F. Sander, H. M. Pollett, A. H. Smee, W. H. Young, H. J. Chapman, and E. Hill.

Messrs. JAS. VITCH & SONS, Ltd., Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for a very pretty group composed chiefly of rare hybrids. Of these, making their appearance for the first time, were *Cattleya* × *Empress Frederick* var. *Leonate* (Mosses ♀, *Dowiana* ♂), a very handsomely-coloured form of the hybrid shown by Messrs. Veitch in 1892, and which had white sepals and petals. The present fine variety somewhat resembles *C. x Hardyana*, but has a broad circular fronted lip; sepals bright rose; petals dark rose, changing to light lilac towards the much crimped margin; lip yellow at the base with dark crimson lines, the front being rosy-crimson; flower very fragrant (Award of Merit). *Lælia* × *Olivia* (*xanthina* × *crispa*), a neat and novel flower with yellow sepals, and petals slightly tinged with red; lip yellow at the base, soft rose with some obscure yellow veining in front (Award of Merit). *Cypripedium* × *Alonso* (*Spicerianum* × *Arthurianum pulchellum*), in which the upper sepal was white marked with purple, the remainder of the flower resembling some forms of *C. x Leeanum*. Also in the group were *Lælia* × *Cattleya* × *Stutteriana*, *L. C. x Decia*, *L. C. x Semiramis*, *L. C. x Palas*, *L. C. x Tiresias*, *Cattleya* × *Mantini*, *Cypripedium* × *Leeanum* varieties; *C. x Actæus*, *C. x Prospero*, *C. x Euryades*, *C. x Robert*, *O. x Nobe*, *J. x Phæra*, *C. x Io grand*, *C. x Genone*, *Zygopetalum Mackayi*, *Epidendrum Wallisi*, &c.

Messrs. HUGH LOW & CO., Clapton, secured a Silver Flora Medal for a very bright group, in the centre of which was *Vanda coerulea*, and around it a dozen fine and distinct varieties of *Cattleya labiata*, also a form of *Cypripedium*.



FIG. 114.—*DENDROBIUM CECYLOGYNE*. (SEE P. 386.)
(Flowers greenish-yellow; lip brownish-black; and the column streaked with purple.)

Nurseries, exhibited a group of flowering-plants, composed of the winter-flowering, fibrous-rooted *Begonia Gloire de Lorraine*, and some plants of a new scarlet, winter-flowering *Carnation*.

An exceedingly commendable exhibit of *Begonia Gloire de Lorraine* was made by Mr. F. CUBBERLEY, gr. to J. W. FEARLE, Esq., Leyswood Gardens, Groombridge. This included about forty plants in 5 and 6-inch pots, well grown, and abundantly flowered, and the flowers were of capital colour. These excellent decorative plants were interspersed with a few *Palma* and *Ferns* (Silver-gilt Banksian Medal).

An object-lesson in the culture of *Euphorbia* (*Poinsettia*) *puleherrima* was furnished by Messrs. T. CRIPPS & SONS,

considerably, but beyond a very free blooming habit, the variety may not be exceptional.

From Messrs. VILMORIN, ANDRÉUX & CO., Paris, came a few plants of *Primula obconica*, scarcely so well flowered as they are usually seen here.

CHRYSANTHEMUMS.

Five bunches of *Chrysanthemums*, in as many varieties, were sent by M^{rs}. ANATOLE CORDONNIER, Bayonne, France. The committee passed a Vote of Thanks for them, the varieties being of ordinary merit, so far as could be judged from the specimens.

An Award of Merit was granted to white Japanese *Chry-*

× Conco-laure, the massive C. × Prewetti, of unknown parentage, but with evidence of C. villosum as one of the parents; C. × Sallieri Hyacum, C. × ananthum superbum, varieties of C. × Lecanum, C. × Enfieldense, some good Odontoglossum crispum, Oncidium Forbesii, O. pretextum, and a pretty lilac-coloured Cattleya Bowringiana.

The Right Hon. JOSEPH CHAMBERLAIN, Highbury, Moor Green, Birmingham (gr., Mr. Smith), was awarded a Silver Banksian Medal for a small stand of excellently grown hybrid Orchids, viz., Lallo-Cattleya × Clive (C. Dowiana × L. pumila prestans), a grand hybrid raised by Norman C. Cookson, Esq. In the present high state of cultivation, it showed its distinctness from L. C. × Ingrami (L. Dayana × C. Dowiana aurea) very plainly, especially in its larger size and brighter colouring; L. C. Gottleiana (C. labiata × L. tenebrosa), a grand flower, partaking much of L. tenebrosa in form, but of a clear, soft rose-colouring, the front of the lip being rose-purple; L. C. × Ophelia (C. Bowringiana × L. C. elegans), sepals and petals bluish-white, front of the lip purple; Cattleya × Miss Williams (Harrisoniana × Gaskelliana); Lallo-Cattleya albanensis, and L. C. × Corbeillensis.

Messrs. F. SANDER & Co., St. Albans, staged an effective group, in which were Maxillaria elegantula, Rolfe, n. sp., a pretty species, near to M. fucata, illustrated in the *Gardeners' Chronicle*, November 17, 1888, p. 577; its flowers were white, tinged with yellow on the outer halves, and spotted with chocolate colour (Botanical Certificate); Phallo-Calanthe × Arnoldiae, with pretty pink-tinted flowers; Phaius × Ashworthianus, with yellow flowers, the lip of which was marked with dark purple; Calanthe × Florence and C. × bella; Chondrorhyncha Chestertonii, Cymbidium × Winnianum; varieties of Cypripedium × Lecanum, and other Cypripediums; Dendrobium Johnsoniae, and Habenaria carnea (Silver Banksian Medal).

Baron Sir H. SCHRODER, The Dell, Egham (gr., Mr. H. Ballantine), showed Odontoglossum Dayanum, said to have been so named by Professor Reichenbach, with fine large cream-white flowers profusely spotted with cinnamon-brown. It very closely resembled O. prestans, figured in the *Lindleya*, vol. vii., p. 71 (Award of Merit).

W. P. BURKINSHAW, Esq., West Hill, Hessele, near Hull (gr., Mr. J. Barker), showed Cattleya labiata White Queen, a pure white variety, with a very faint trace of pink on the lip (Award of Merit).

Messrs. LINDEN, l'Horticulture Internationale, Parc Leopold, Brussels, showed Cypripedium × Beekmanii (Boxalli superbum × bellatulum), the largest and most beautiful of its section. Its massive flower had the dorsal sepal of a bright emerald green, profusely spotted with black, and edged with white; petals very broad, chestnut-red, margined with yellow, and with some purple spots on a light ground at the base; lip chestnut-red margined with yellow—the whole flower having a highly polished-looking surface. As with the fine C. × Lucienianum, which somewhat approaches it in form, the use of C. bellatulum as one of the parents was doubted by most of the members of the committee. In any case, it is a grand flower (Award of Merit). Messrs. Linden also showed the clear yellow and white C. insignis Luciani.

R. L. MEASURES, Esq., Cambridge Lodge, Flodden Road, Camberwell (gr., Mr. J. H. Chapman), showed the singular Cirriopetalum refractum (oft n. called the Windmill Orchid), with a nodding raceme of golden yellow flowers, the dorsal sepals of which formed the conspicuous part. The flowers were arranged round the spike, so as to be sensitive to the slightest current of air, and formed an attractive curiosity (Botanical Certificate). Mr. Measures also showed Cypripedium × Saron (niveum × (?) venustum Measuresianum), with white flowers tinged with emerald-green, and profusely spotted with purple.

W. B. LATHAM, Esq., Botanic Gardens, Edgbaston, Birmingham, sent Cypripedium × Deedmanianum (Spicerianum × Chamberlainianum), a pretty hybrid having the upper sepal white, with a green base, and a median line of purple, on each side of which were some lighter purple spots; petals yellow tinged with purple; lip rose with yellow margin. The flower so closely resembled the C. × Haynald-Chamberlainii, shown at the last meeting, as to raise doubt as to the record of that hybrid being correct; otherwise it may be that the individuality of C. Chamberlainianum is so pronounced as to allow of but little variation in the progeny, even when widely separated species are employed.

The Hon. P. ALLSOPP, Battenhall Mount, Worcester (gr., Mr. Fox), sent a fine plant of Cypripedium insignis Vigoriana, a peculiar variety in which the spotting usually seen in the species was wanting.

PHILIP CROWLEY, Esq., Waddon House, Croydon (gr., Mr. Harrie), showed a good form of Cattleya labiata and C. l. roses, the latter with very brightly-coloured flowers, the front of the lip bearing an irregular blotch of crimson.

W. H. LUMSDEN, Esq., Balmiedie, Aberdeen (gr., Mr. Roberts), sent varieties of Cypripedium insignis montanum, including one clear yellow form, near to C. l. Ballie.

Captain HOLFORD, Westonbirt, Tetbury (gr., Mr. Chapman), sent cut Orchids, including Odontoglossum Andersonianum, Zygopetalum crinitum, Cypripedium × Lecanum giganteum, and varieties of C. insignis.

Fruit Committee.

Present: P. Crowley, Esq., chairman; and Messrs. Jos. Cheal, A. F. Barron, A. H. Pearson, P. C. M. Veitch, Alex. Dean, J. W. Bates, G. T. Miles, C. Herrin, G. Reynolds, F. Q. Lane, Jas. Smith, S. Norman, J. Willard, and Robt. Fife.

Messrs. T. RIVERS & Sons, Nurseries, Sawbridgeworth, Herts, exhibited six baskets of Apples taken from trees

cultivated in pots under glass, the varieties being Ribston Pippin, beautifully coloured, and for the variety large fruits; Cox's Orange Pippin, equally fine and good; Buckingham, a showy fruit of oblate shape, with deep basin round the eye, and skin of a rosy-red on the sunny side, and pale yellow elsewhere; Peasgood's Nonsuch, of extraordinary high colour, and above the average in size; King of Tomkins County, a fine high-coloured form of this favourite American Apple, with the colouring disposed more in streaks than as broad patches; Bijou, a small, pretty, smooth-skinned, crimson-skinned fruit (Silver Banksian Medal).

Messrs. RIVERS showed black Grape Directeur Tisserand, an apparently long-keeping variety, of nice flavour, oval in form of berry, a moderately thick skin, with plenty of bloom upon it. We believe it has been shown several times at the Royal Horticultural Society's meetings (an Award of Merit). Another Grape shown by them was Gradiška, a Hungarian variety of no part cular merit, with oval white berries.

Thirty dishes of very excellent Apples, in as many varieties, came from the gardens of C. LEE CAMPBELL, Esq., Gileston Court, Ross, Herefordshire (gr., Mr. Bayford). These consisted of popular varieties of mostly more than average size, of high colour generally, and clear of skin—a very nice collection. Especially fine were Fearo's Winter Nonsuch, Glria Mundi, Besspool, Emperor Alexander, Golden Noble, and Cox's Pomona (Silver Banksian Medal).

Mr. E. Beckett, gr. to Lord ALDENHAM, Aldenham Park, Elstree, Herts, showed seven heaps of Onions, of very large size, viz., Alls Craig, Anglo-White Spanish, Green's Prize-taker, Cranston's Excelsior, Cocoonut, Sutton's A1, and Barnet Hero (Silver Banksian Medal).

The Apple Competition resulted in Mr. Woodward, gr. to ROGER LEIGH, Esq., Barham Court, Maidstone, taking 1st for Cocker Pippin; and Mr. Bayford, gr. to C. LEE CAMPBELL, Esq., Gileston Court, the 2nd, with Cox's Orange Pippin.

The Pear Competition was decided in favour of Mr. J. Crook, gr. to W. H. EVANS, Esq., Forde Abbey, Chard, with Winter Nellis; Mr. WOODWARD being 2nd, with Nouvelle Fulvie. The number of dishes shown on this occasion was very small.

Mr. CHAMBERS, Beech Farm, Mereworth, Maidstone, received an Award of Merit for a seedling Apple named Lady Falmouth, the fruit resembling in general appearance Devonshire Quarrenden. As regards its flavour, we are unable to speak.

Mr. Batchelor, gr. to Lieut.-Col. VERNON, Harefield Park, Uxbridge, showed a dish of the Cape Gooseberry (Physalis peruviana), and received a Vote of Thanks.

Apple Reinette Superfin was shown by Messrs. J. JEFFRIES & SON, Nurseries, Cirencester, a large-ribbed, somewhat conical-shaped fruit of a crimson colour on the sunny side. It was unnoticed by the committee.

HORTICULTURAL CLUB.

NOVEMBER 9.—The usual monthly dinner and conversation took place at the rooms of the Club, Hotel Windsor, on the above date. The chair was occupied by the Rev. W. WILKS, and notwithstanding the attractions of the Chrysanthemum, there was a good attendance of members, amongst whom were Messrs. Shea, Selge Leonard, C. E. Pearson, A. H. Pearson, G. Buyard, George Nicholson, G. Massee, James H. Veitch, and the Secretary.

The discussion was opened by Mr. G. MASSEE, President of the Mycological Society, who gave a very interesting address on "Lilies and their Diseases," and a very instructive and practical conversation followed, in which most of the members present joined. A cordial Vote of Thanks was accorded to Mr. Massee for his valuable address. We give an outline of it, which, however, only gives a faint idea of its value.

Among the various fungous diseases to which Lilies are subject, three kinds require special notice, on account of the wholesale destruction caused by their presence. One of these, unfortunately too well known in this country, especially during damp seasons, first appears under the form of small, yellowish spots on the leaves and flower-buds; these spots soon change to a dark olive-green colour, and if a fragment of the fungus taken from one of these spots is examined under the microscope, it is seen to consist of a number of dark coloured threads, each bearing two or three clusters of spores or "conidia" near the tip. These conidia are produced in rapid succession during the summer months, and are capable of germination the moment they are ripe. The conidia are readily distributed by wind, insects, or rain, which carries them from diseased to healthy leaves. All conidia alighting on the damp surface of a Lily leaf or flower germinate at once, enter the tissues of the plant, and form new centres of disease, which quickly produce fresh conidia. From the above account, it will be readily understood how easy, and also certain, it is for the disease to spread rapidly after it has once gained a foothold in a bed of Lilies. At this stage spraying with a fungicide is of great service in preventing the spread of the disease, as all germinating conidia are destroyed. A solution of potassium sulphide, in the proportion of 1 oz. of the sulphide, dissolved in 8 gallons of water, serves the purpose. During the summer the mycelium of the fungus becomes aggregated into numerous minute, compact, black lumps, or sclerotia, in the tissues of the leaves, stem, and often also in the outermost bulb-scales. As the leaves and stems decay during the winter, the sclerotia are liberated and lie on the ground, where they remain in an unchanged con-

dition until the following spring, when they produce conidia, which find their way on to the leaves or flowers of Lilies, and the disease commences its life-cycle anew. From what has been said, it is scarcely necessary to indicate the importance of not allowing leaves and stems of diseased plants to decay on the ground; all such should be collected and burned. All bulb-scales showing the minute black sclerotia imbedded in their tissue should be removed before the bulbs are planted. The conidial form of this fungus is called Botrytis; it is probably a stage in the life-cycle of a higher form called Sclerotinia, but this has not yet been definitely proved.

A second disease, caused by a fungus called Phyllosticta lillicola causes the appearance of reddish patches on the stems and leaves of Lilies, followed by a bronzing of the leaves; the flowers of such plants are usually distorted, or not unfrequently fall in the bud stages. Promptitude in spraying on the first appearance of the disease would check its spread, and the burning of all diseased stems and leaves would tend to prevent a recurrence of the disease.

A third disease, which has during the past two years proved most disastrous to the bulb industry in Japan, is known as Rhizopus necans. To the naked eye this fungus presents the appearance of numerous miniature pins, with round black heads springing from a white down felt of mycelium. The minute black heads contain numerous conidia, and such of these as alight on any injured portion of a bulb, germinate at once, enter the tissues, and eventually kill the bulb. In addition to conidia, a second form of fruit is formed by the fungus in the tissues of the decaying bulb; these remain in a resting condition until the following spring, when they produce conidia, by which the crop of bulbs is again infected. The fungus cannot enter the unbroken tissues of a bulb, but gains access through some wound, usually broken root-fibres.

It has been shown that bulbs are much more susceptible to the disease when lifted before they are quite mature. Furthermore, such bulbs are usually packed for exportation before they are dry, consequently sweating takes place during the journey, and all the conditions tend to favour the development and spread of the disease.

A full account of this disease, along with illustrations, is given in the *Kew Bulletin*, February—March, 1879.

HAMMERSMITH HORTICULTURAL.

NOVEMBER 11.—The thirteenth Chrysanthemum show held in the newly-opened Hammersmith Town Hall was the best of the series of exhibitions that this society has as yet held. The removal of the show to a more central spot, and where sufficient space was obtained to display the exhibits to advantage, was quite a step in the right direction. The society has only to make itself better known, not a difficult operation in these days, and offer sufficiently good prizes in the future, in order to induce more spirited competition, the life of such gatherings.

In the gardeners' class for a group arranged for effect, the 1st prize was obtained by Mr. LLOYD, Merton Lodge, Chiswick, with a pretty contribution; 2nd, Mr. F. HOODLESS, Chiswick.

In the amateurs' division for a similar group, the principal prize-winners were Messrs. THOMPSON, CLARKE, and WOODHOUSE.

Cut blooms.—In this section, the most noteworthy exhibit was comprised in the fine Japanese and incurved flowers exhibited by Mr. P. BOSANQUET, gr., Pontfield, Herts, which easily secured the special prize in the open class.

Quite the feature of the show was a very fine group of foliage and flowering plants sent (not for competition) by Messrs. WILLS & SEAGAR, South Kensington. Mr. J. J. HILLIER, Hammersmith, sent a good collection of Apples.

CHESTER PAXTON.

NOVEMBER 16.—The seventh show of Chrysanthemums and fruits was held in the Town Hall. The Assembly Room, in which the exhibition was held, presented a very pleasing appearance, the Chrysanthemums and fruits having been arranged with taste.

Among the exhibits in the fruit section was one from the Duke of WESTMINSTER, Eaton Hall (Mr. Barnes, gr.), who sent a meritorious collection of sixty dishes of Pears and Apples. Next to this the most conspicuous collection was that from Mr. JOHN WATKINS, Pomona Farm, Withington, Hereford, who was represented by fifty dishes of Apples, the colour of some of which was excellent. Mr. LYLE SMYTH, Barrowmore (Mr. Morris, gr.), and Mr. E. PAUL, Graysfield, Barrow (Mr. Fletcher, gr.), were local competitors showing in this class.

Messrs. DICKSONS, Limited, again occupied the whole length of the lower end of the room, with an imposing and miscellaneous exhibit of flowers and fruit. The exhibit contained excellently grown specimens of Chrysanthemums, Cyclamens, Carnations and Palms, the front being finished off by luscious-looking fruits from the Upton and Newton Nurseries. Section A was open to professional gardeners, and the classes for dessert Apples were noticeable. In the single variety class, the Rev. L. GARNETT, an old and successful exhibitor was 1st; Mr. SAUNDERSON, of Bodnant, who showed a capital dish of Ribston Pippins having to be content with 2nd place.

Miss HUMBERSTON, Newton Hall (gr., Mr. Wakefield), took premier award for Cox's Orange Pippin. Other successful exhibitors in these classes included Mrs. PORTS, Hoole Hall (Mr.

J. Taylor, gr.); the Hon. C. T. PARKER, Eccleston; Mr. B. C. ROBERTS, and Mr. T. R. FLEMING, Rowton Grange. The kitchen Apples also made a capital show.

Turning to Section B, Mr. JOHN WYNNE, Waverton, secured 1st honours for Ribston Pippins; while in the Cox's Orange Pippin class, Mr. J. JEFFERSON, Pool Hall, was 1st. Mr. WILLCOCK, Handbridge, and Mr. JOSEPH SUCH, Davenham, Mr. THOMAS HATFIELD, and Mr. JEFFERSON also carried off several awards in the classes for Apples and Pears.

A new departure was made in the arrangement of the Chrysanthemum classes, the groups of plants being in the centre of the room instead of at the sides. The alteration added greatly to the general attractiveness of the exhibition. The entries were made in this class by the same five exhibitors as last year, when Mr. J. WYNNE FROULKES, Old Northgate House, took 1st prize. Mr. WYNNE FROULKES repeated his success this season, the other four groups, however, being also of excellent merit.

A new feature in the Chrysanthemum classes was that for an epergne filled with such of those flowers as are suitable for table decoration. Nine competitors entered in this class, and although Mr. EDGE, of Hoole Bank, is not perhaps so advantageously placed as the others, he managed to carry off the 1st prize in the face of strong opposition.

The class for the six best specimen plants of Japanese varieties did not obtain so many entries as could have been wished, but the quality was very good, the 1st prize blooms from Mollington Hall (Mr. WORKER) being almost perfect.

WIMBLEDON HORTICULTURAL.

NOVEMBER 16, 17.—Chrysanthemum shows evidently have their seasons of flux and efflux, and the one under notice is a case in point, as last year the exhibition was of very moderate character; whereas, this year it showed great improvement. It also had the benefit of being held in the roomy Drill Hall. There was, however, room for greater competition, and this fact points to the conclusion that such shows are far too numerous.

Cut-blooms.—There were but two competitors in the chief class for thirty-six blooms, half Japanese, half incurved, Messrs. Hunt, gr. to PASTIA RALLI, Esq., Ashted Park, and Mr. GIBSON, gr. to J. WORMALD, Esq., Morden Park. The prizes went in this order, Mr. HUNT's blooms being excellent in both sections. The same competitors were in the same order in the class for twelve Japanese, repeats of flowers previously seen largely.

In a similar class for Japanese, Mr. J. FRENCH, gr. to Mrs. BARCLAY, Wimbledon, was 1st, with very good blooms; Mr. SKEGGS, gr. to Mrs. DUNN, Wimbledon, 2nd. With twelve incurved blooms, Mr. FRENCH was again 1st, but Mr. ALDERMAN was 2nd. In the class for six Japanese, Mr. H. A. NEEDS, Woking, was 1st with capital blooms; and with six incurved blooms, Mr. FRENCH was 1st.

Plant Groups, &c.—The best miscellaneous group, very bright and pleasingly arranged, came from Mr. NEWELL; Mr. CHANDLER, gr. to the Rev. Canon HAYGARTH, being 2nd.

With Chrysanthemum groups, very much of the usual semicircular and flat-faced order, Mr. D. GIBSON, gr. to J. B. JOHNSTONE, Esq., Kingston Hill, was 1st, the front view of the plants being anything but pleasing.

Fruit.—Competition in Grapes was limited, the Whites being presented by Messrs. ALDERMAN and by Mr. Methven, gr. to W. KEILLER, Esq., Wimbledon Park, both being moderate exhibitors of Muscats of Alexandria. With Blacks the position was reversed, both having creditable Alicantes, but Mr. Methven had the finest berries.

Mr. ALDERMAN put up a long and very elegantly-arranged collection of hardy fruits, with table-plants and cut flowers interspersed, producing a most pleasing effect.

FOLKESTONE AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 16, 17.—This show took place, as usual, in the Palace Gardens Theatre, the large ante-room being filled with plants, and an inner room with a large number of cut flowers and vegetables. The quality of the cut flowers was much in advance of that of last year, and in all the leading cut flower classes there was spirited competition. Several were open classes, and some of the leading growers in the southern district entered for competition.

The leading class was for twenty-four blooms, twelve Japanese and twelve incurved, some good stands competing, the best coming from Mr. A. BUTCHER, gr. to C. J. BISS, Esq., Smooch. His leading Japanese were J. Seward, Madame Rogain, Madame Carnot, Oceana, Edith Tabor, Mutual Friend; and his more prominent incurved, Lord Rosebery, Bonnie Dundee, Miss Phyllis Fowler, Alfred Salter, Empress of India, Mrs. R. C. Kingston, and C. H. Curtis. 2nd, Mr. W. Frost, gr. to G. ASHBY TODD, Esq., Ashford, whose best incurved were Lord Alcester, Bonnie Dundee, Jas. Agate, Violet Tomlin, Mrs. R. C. Kingston, Triomphe d'Eve, C. H. Curtis, and Lyne, Jr. There were some very fine Japanese also.

Mr. H. SHOOTSMITH, nurseryman, Woking, had the best twelve Japanese, a very fine lot, the leading flowers Mrs. J. Lewis, Australia, Oceana, Mutual Friend, Midlle Lawrence, Zede, Mrs. H. Weeks, Lady E. Saunders, Australian Gold, &c.; Mr. T. COTTERELL, gr. to Sir W. GEARY, Bt., Tonbridge, was 2nd, having also some very fine blooms, chief among them Mrs. C. BLOK, International, M. Pankowcke, Mutual

Friend, Edwin Molyneux, Souvenir d'une Petite Amie Niveaux, and T. Wilkins.

With twelve incurved, Mr. BUTCHER was again 1st, having in very fine character Duchess of Fife, Bonnie Dundee, Violet Tomlin, John Lambert, D. B. Crane, Triomphe d'Eve, and C. H. Curtis; Mr. TODD was again 2nd, having a fine bloom of Harold Wells in his lot.

The best twenty-four blooms (open only to gardeners' societies in Kent), was won by that of Ashford, Mr. BUTCHER contributing some very fine Japanese and incurved; Mr. TODD was placed 2nd. There were several other classes for cut blooms, but the foregoing were the leading ones.

The culture of specimen plants is not well carried out at Folkestone; in most of them could be seen somewhat poor blooms on indifferently-grown plants. Groups of Chrysanthemums arranged for effect resulted in the judges having to put plants carrying the finest blooms last, growth and grouping alike being defective.

The best group of miscellaneous plants came from Mr. GEO. MOUNT, of Canterbury and Folkestone, seasonable flowering and foliage plants of good quality being intermingled. Mr. G. PILCHER, nurseryman, Folkestone, was 2nd.

In the centre of the main hall was a very fine group of plants from Mr. GEO. MOUNT. Mr. H. CANNELL, Swanley, had a very attractive table of cut blooms of Chrysanthemums, zonal Pelargoniums, Violets, &c.; and Mr. A. WILSON, decorative florist, Folkestone, a large table of floral decorations.

Vegetables were numerous shown, and altogether the results were decidedly satisfactory.

LICHFIELD CHRYSANTHEMUM.

NOVEMBER 17, 18.—The fourth annual exhibition was held in the St. James' Hall, Lichfield, on the above dates, the opening ceremony being performed by J. COURTNEY WARNER, M.P. The show in all departments was an excellent one.

Amongst the non-competitive exhibitors were J. COURTNEY WARNER, M.P., who sent a collection of Orchid and other flowers; Mr. T. WALMSLEY, City Seed Stores, Lichfield, who contributed cut flowers, and fruit and vegetables; Mr. F. BARRANCE, a collection of Chrysanthemums and other plants; Mr. T. W. BROOKS, cut flowers and table-plants; Mr. W. LITTLE, cut flowers; Mrs. CHADWICK, Hints Hall, table-plants and Chrysanthemum blooms. Messrs. PERKINS & SONS, Coventry, a fine display of bouquets and other floral designs. Mr. W. F. GORDON, Stowe, had the best group of Chrysanthemums, and the best group of miscellaneous plants.

The finest dozen blooms of Japanese Chrysanthemums were shown by Mrs. CHADWICK, Hints Hall; the next in point of merit being those from Sir CHARLES FOSTER's garden.

Mr. R. P. COOPER, Shenstone Court, had the finest half-dozen cut blooms of Japanese; and the finest dozen of incurveds, also the finest half-dozen, came from Mrs. CHADWICK's garden.

Mrs. BAGOT LANE, Kings Bromley Hall, had the best half-dozen of Anemone-flowered blooms.

The table-decoration of Chrysanthemums, set up by Miss SWINTON, of Lichfield, were adjudged to be the finest, and in the best taste.

A few plants of Chrysanthemums in competition, and small quantities of fruits and vegetables, made up the exhibition.

RUGBY CHRYSANTHEMUM.

NOVEMBER 17, 18.—This Society held a very successful show, in which the classes were well contested, especially those for cut blooms.

For a group of Chrysanthemums in a space of 50 square feet, G. A. SCOTT, Esq., The Lawn, Rugby (Mr. Maunse, gr.), was 1st, with a well-arranged group of finely-grown plants.

In the class for four trained specimen plants, Mr. CALDSWOW was 1st, and his best blooms were Chas. Davis and Vivand Morel.

Mr. CALDSWOW was 1st for one single plant of Mrs. William Holmes.

For twenty-four cut blooms, the 1st prize and N.C.S. Certificate were won by A. JAMES, Esq., Cotton House, Rugby (gr. Mr. A. Chandler); he had twenty-four first-class blooms of the following varieties:—Madame Carnot, Oceana (very fine in colour), Silver King, Mutual Friend, Hairy Wonder, M. Pankowcke, John Seward, M. Chenon de Leché (one of the best blooms in the show), Simplicity, Richard Dean (fine in colour), Modestum, Duke of York, &c. A. MUNTZ, Esq., Dunsmore, Rugby (gr. Mr. J. Blakenby), was 2nd, who had Madame Carnot, very good.

For eighteen Japanese blooms, Mr. JAMES was again 1st, A. MUNTZ, Esq., 2nd.

Mr. PEARCE, Weedon, was 1st for twelve Japanese blooms, and for twelve incurved blooms.

Fruit.—For two bunches of Grapes, Earl DENBIGH was 1st, with well finished bunches of Muscat of Alexandria; the Earl FERRERS was 2nd.

Apples and Pears were very good, considering the season, the principal prize-winners being Earl DENBIGH and Mr. CORRY, the best specimens of Pears being Beurré Bachelier and Beurré Diel.

Vegetables were a marked feature in this show. Table decorations, bouquets, and baskets of Chrysanthemums were numerous, and Mr. ROBINSON, of Rugby, was the chief winner in these classes.

A stand was provided for surplus flowers, fruits, and vege-

tables, presided over by ladies, the proceeds of which will be given to the Gardeners' Orphan Fund. Last year a balance of over £6 was sent to the Fund.

HULL CHRYSANTHEMUM.

NOVEMBER 17, 18.—For many years Hull has held a Chrysanthemum show of the very first rank. To this Society belongs the credit of introducing the system of displaying the plants in groups, interspersed with foliage-plants; and the groups at the Hull shows have always held a foremost position. Many societies have since adopted the practice, or endeavoured to improve upon it, but even now there are nowhere such groups to be seen as those at Hull. Cut blooms, too, are exhibited at Hull in as fine quality as at any other place in the United Kingdom. The management is excellent, and the Hon. Secretaries, Messrs. Dixon and Harland, are the very men for the position. The show is held annually in the Artillery Barracks; and although the building, with its three side rooms, affords much space, its limits are taxed to the utmost by the exhibits.

Groups being a most noteworthy feature, deserve a prior notice. A Silver Challenge Vase, valued at 25 guineas, along with a cash-prize of £6, was offered for a group of Chrysanthemum plants interspersed with foliage plants and arranged for effect in a space of 100 square feet. This year there were four competitors, and arranged as they were, at the sides of the principal hall, a grand display was made.

The judges awarded the 1st prize to the exhibit belonging to the Hull Corporation, and as this body could not accept a prize, the award fell to the next in point of merit—that arranged by Mr. G. Wilson, gr. to Sir J. RECKITT, Swanland Manor, Brough, which was only a trifle inferior to that previously named. The group arranged by Mr. Wilson was composed of fairly good Chrysanthemums, associated with magnificent Crotons, Palms, and other foliage plants, notably a variety of Marantas, all of which, being set on a green base, could be distinctly seen. The back of the group, which was semi-circular in form, with two abutting semi-circles in front, was fully ten feet high; and taken as a whole, it was a magnificent display. Mr. G. Jarvis, gr. to Mrs. WHITTAKER, Cliff House, Hessle, was a good 2nd, with finely-flowered Chrysanthemums and good foliage plants, but they were too closely placed at the front. Prizes were offered also for a group of miscellaneous plants arranged for effect in a space of 100 square feet; here Mr. G. WILSON was successful, winning the premier award with a really good arrangement of suitable plants. Mr. JARVIS was 2nd. For a decorated drawing-room mirror or panel group of Chrysanthemum plants, interspersed with foliaged plants arranged for effect in a space of 9 square feet, Mr. LEADBETTER took premier position, with a bold, effective group of well-flowered Chrysanthemums, Dracenas, &c.

Specimen Chrysanthemums made a bold display, being numerously staged. For six trained plants, Mr. H. Thompson, gr. to C. J. RINGROSE, Esq., The Grange, Cottingham, was an easy winner, with good plants. Mr. Thompson also won premier award for three standards, all of the Rundle type.

Bush-grown yet not formally-trained plants were well represented by Mr. W. GOODHILL, 54, Trinity Street, Hull.

An interesting class was that for "cut-back" Chrysanthemums, six plants, to be judged by their quality of bloom, with dwarfness of growth, and good foliage. Mr. V. Waterhouse, gr. to U. T. OWBRIDGE, Esq., Cherrygarth, Cottingham, won with plants well developed in bloom and foliage; Mr. E. WEST, The Nurseries, Cottingham, was 2nd.

Plants in the amateur classes were best shown by Mr. ROBERT THURSK, Grovehill Road, Beverley, and in all classes they were meritorious.

CUT-BLOOMS.

For twenty-four incurved, there were six competitors, the 1st place being taken by Mr. C. J. SALTER, gr. to J. B. HAYWOOD, Esq., Woodhatch, Reigate, with medium-sized, well-finished blooms of leading varieties. Mr. LEADBETTER was a good 2nd; and W. MEASE, gr. to A. TATE, Esq., Downside, Leatherhead, 3rd.

For twenty-four Japanese distinct, Mr. MEASE won easily with grandly developed blooms of the best varieties; Mr. SALTER being 2nd.

The best six blooms of one variety (Japanese) were staged by Mr. SALTER, the variety M. Chenon de Leché being shown in grand condition.

Anemone-flowered varieties were well represented. The dozen blooms shown by Mr. SALTER were quite of the best class, as also were the reflexed and Pompon varieties.

Chrysanthemums in baskets or vases were well shown by Mr. G. Wilson and Mr. F. MASON, gr. to A. SMITH, Esq., Woodleigh, Hessle. The former had exceedingly fine examples of both incurved and Japanese in separate baskets. The latter staged all Japanese; both were good exhibits, and won premier award in their respective classes.

Single-flowered varieties made a bright display, and were much admired. Mr. WATERHOUSE won, with a grand stand of blooms.

Table decorations at this show are very fine. These, arranged in a room under artificial light, made an attractive display.

Mrs. F. S. WHEELER, "Chepstow," Prince's Avenue, Hull, won the Challenge Plate, value ten guineas, for a dessert-table, 8 feet by 4 feet, with a pleasing arrangement of bronze and yellow Chrysanthemums, lightly arranged with Fern-grasses, &c.

Mrs. F. TOPHAM, Hotham Hill, Brough, won the premier award for a similar table with a tasteful arrangement.

BRISTOL CHRYSANTHEMUM.

NOVEMBER 17, 18.—This Society held its thirty-fourth exhibition in the Colston Hall, and it was a remarkably successful one, the number of exhibits being considerably larger than was the case last year, and the quality was generally of high excellence.

The class for a group of Chrysanthemums was won by J. DOLE, Esq. (gr., Mr. J. Marshall), with plants having large blossoms and good foliage, all Japanese varieties; S. C. GODWIN, Esq. (gr., Mr. McCollock), who was a close 2nd, had some incurveds among his plants.

In a class for groups of Chrysanthemums arranged with Ferns and ornamental foliage plants, the competition was very keen, and E. S. GEORGE, Esq. (gr., Mr. Ross), won 1st prize.

For a bank of miscellaneous plants, 10 feet by 5 feet, Chrysanthemums excluded, J. SANDERS, Esq., was an easy 1st, with a beautiful arrangement.

Trained plants, both standards and dwarfs, exhibited skilled culture, Mrs. GIBSON (gr., Mr. Ayres), Major-Gen. DAUNT, and E. P. MARTIN, Esq., being the leading prize-winners.

In certain classes devoted to them, Orchids were shown well, and they were one of the most brilliant features of the show.

Cut-blossoms.—Ten exhibitors staged in the class for thirty-six Japanese blossoms. Lady THEODORA GUEST (gr., Mr. Wilkins) taking premier honours with grand and fresh flowers; Mr. DRAKE of Cardiff, was good in 2nd place.

For thirty blossoms, incurved, Sir C. PHILLIPS, Picton Castle (gr., Mr. Dumble), was 1st with large and well-finished flowers; W. M. BAKER, Esq. (gr., Mr. Applin), was placed 2nd with equally well-finished but somewhat smaller blossoms.

For twelve blossoms, Japanese.—1st, R. A. BOWRING, Esq. (gr., Mr. H. A. Joy); and for two ve Japanese incurved, Mrs. H. SMITH secured a similar position. There were eight collections of good blossoms in the latter class.

Floral wreaths, bouquets, sprays, &c., were shown in great numbers. Mr. WINSTONE, Miss BASH, C. DODSON, C. LOW, Mr. W. TRESEDER, Mr. FISHER, and Mr. COLES being the chief prize-winners.

Specimen Ferns were shown best by Mr. BANNISTER, who was 1st for six plants.

MISCELLANEOUS.

Mr. GODFREY, Exmouth Nurseries, exhibited fourteen dozen Chrysanthemum blossoms in splendid condition, including most of the new varieties for which he has taken certificates at the National Chrysanthemum Society's exhibitions. He also showed eighteen varieties of Carnations, one named Exmouth Scarlet, being a fine full flower of good substance.

Messrs. JAS. CARTER & Co., London, staged a large collection of vegetables.

YORK FLORISTS'.

NOVEMBER 17, 18, 19.—The above Society held its eighteenth Chrysanthemum and fruit show in the Fine Art Exhibition. Although the entries were more numerous than last year, the tables did not appear so well filled, especially in the hardy fruit section, but the quality of the fruit and vegetables was good.

In the class for a group of Chrysanthemums, interspersed with foliage plants, there were three entries, the 1st prize of £10 and a Gold Medal being won jointly by Mr. R. McIntosh, gr. to J. T. HINGSTON, Esq., York, and Mr. G. COTTAM, who were declared equal. Mr. McIntosh's was a very light arrangement, but rather flat; while Mr. Cottam trying, apparently, to guard against this evil, obtained a result that was rather top-heavy.

For a group of Chrysanthemums arranged for effect, Mr. D. DICKINSON, gr. to W. B. RICHARDSON, Esq., was 1st, his plants being very clean and fresh looking; Mr. E. EVERARD, gr. to Mrs. GUTCH, was 2nd.

For thirty-six cut blossoms, inclusive of eighteen incurved and eighteen Japanese, Mr. J. FOLKARD, gr. to Sir JAMES R. WALKER, was 1st, his incurveds being particularly fine; amongst the Japanese, Madame Carnot, Mdle. Hoste, and E. Molyneux were best. To this prize of £10 is added the Citizen's Challenge Prize, value £20. Mr. Goodacre, gr. to the Earl of HARRINGTON, was 2nd, his Japanese blossoms being very good.

Mr. FOLKARD was again 1st for eighteen incurved blossoms, and for twelve incurveds. In the former class, Mr. G. ANDERSON, gr. to A. MILNETHORPE, Esq., was 2nd.

Mr. WILLIAMS, gr. to the Earl of FAVERHAM, was 1st for eighteen Japanese blossoms, and for twelve Japanese; Mr. PICKER, gr. to F. R. PEASE, being 2nd in each instance.

For six white Japanese, Mr. FOLKARD was 1st; and Mr. WILLIAMS was 1st for six blossoms of any variety not white, with Viviani Morel. In this stand was shown the premier Japanese bloom.

For six golden-yellow Japanese blossoms, Mr. WILLIAMS was 1st with Thos. Wilkins.

For the most tastefully arranged epergne for dinner-table, Messrs. R. SIMPSON & SONS were 1st; and Mr. W. BONSALE was 1st for a hand-bouquet of Chrysanthemums.

The best basket of Chrysanthemums was one from Messrs. R. SIMPSON & SONS.

There were numerous entries for a vase of Chrysanthemums and foliage, arranged for drawing-room decoration, and Mr. A. LUND, gr. to Lord HERRIES won.

Fruit.—In the class of six bunches of Grapes, Mr. J. ALLSOP, gr. to Lord HOTHAM, was 1st with Mrs. Pearson, Alicante,

and Muscat of Alexandria. We are accustomed to seeing good Grapes from this exhibitor, but never previously has he staged better fruit than his bunches of Black Alicante on this occasion. Mr. J. TULLET, gr. to Lord BARNARD, was 2nd.

For two bunches of black and two of white Grapes, Mr. ALLSOP was again 1st.

In the class for a collection of dessert fruits, six varieties, Mr. ALLSOP was 1st with Black Alicante and Mrs. Pearson Grapes, Ribston Pippin and King of the Pippin Apples, Duchess and Doyenne du Comice Pears. In this class Mr. ALLSOP beat Mr. J. TULLET, and Mr. J. McIndoe, gr. to Sir J. W. PEASE, Hutton Hall, Guisborough, who were 2nd and 3rd respectively.

Vegetables were never better shown, and the prizes offered for collections by Messrs. SUTTON & SONS and Messrs. JAMES CARTER & Co. were well fought for.

MANCHESTER ROYAL BOTANIC.

NOVEMBER 18, 19, 20.—In the hurried report published in our last issue of the Chrysanthemum Show held under the auspices of this society, notes upon the following non competitive exhibits were inadvertently omitted. The exhibition was a very fine one.

Messrs. DICKSON, BROWN & TAIT and Messrs. DICKSON & ROBINSON, both Manchester firms, staged collections of remarkably well-grown Cyclamens of good strain.

Messrs. W. & J. BIRKENHEAD, Sale Nurseries, put up a large collection of choice varieties of Ferns.

Mr. JOSEPH BROOME, of Llandudno, sent a large collection of cut flowers obtained from the open; also some cut specimens of Arbutus (Strawberry-tree) bearing numerous handsome fruits.

Messrs. HUGH LOW & Co. staged a valuable and distinct collection of hybrid Cypripediums, amongst which were C. x Mrs. Fred Hardy (First-class Certificate), and Calanthe Veitchii alba (Award of Merit).

Messrs. W. L. LEWIS & Co. showed about thirty magnificent forms of Laelia pumila, var. prestans, representing very valuable forms and colouring, several being worthy of varietal names. Cattleya labiata Lewisii, recently shown in London, was also an attractive plant.

Mr. FRED HARDY, of Tyntesfield, put up a group of choice Cypripedium hybrids, various forms of insignie, all of which were meritorious.

Mr. W. OWEN, Northwich, also exhibited Cypripediums, principally the montana form of insignie, some of which were very distinct.

NORFOLK AND NORWICH HORTICULTURAL.

NOVEMBER 18, 19, 20.—This Society was established in 1829, and it holds two or three exhibitions each year. The Society has a reserve fund of nearly £200, and it is the Chrysanthemum show especially which helps to make the Society so financially prosperous. On this occasion, despite the gloom outside, St. Andrew's Hall was aglow with brilliant tints. The fruit and some miscellaneous plants filled a large ante-room, and a large tent erected outside the hall contained the vegetables, for the whole space of St. Andrew's Hall was required for the Chrysanthemums.

Specimen plants were a great improvement upon those of last year, and much better than anything we saw at Hull; they were bush grown, with excellent foliage, and fine heads of bloom.

Mr. J. G. SELLING, Norwich, was 1st, and Mr. WILLIAM BIRKBECK, Thorpe, 2nd, with six Japanese.

Mr. SELLING was 1st for six incurveds, also with reflex 1, and with three Pompons, being the only exhibitor; but all were decidedly good. Mr. F. RANDALL was awarded a 2nd prize for six Pompons.

Other plants included Cyclamens, Chinese Primroses, zonal Pelargoniums, &c., and there were effective groups of plants in two or three classes.

Some very fine collections of forty-eight blossoms of Japanese were shown, the best coming from Mr. HANSON, gr. to Sir S. CROSSLEY, Bart., M.P., Somerleyton Hall, Suffolk. Among the newer varieties were G. J. Warren, Phoebe, Edith Tabor, Madame Carnot, Mrs. C. Bilek, General Roberts, Eva Knowles, Duchess of York, and others; depth, freshness, and colour were seen in this collection. Mr. MUSK, gr. to Lord DE RAMSAY, Haveringham Hall, was a good 2nd.

The best thirty-six blossoms, eighteen incurved and eighteen Japanese, came from Mr. C. H. WATTS, the former of which were very good, including C. H. Curtis, Major B. Maillon, Bonnie Dundee, Perle Dauphinoise, and others. Mr. B. E. FLETCHER was 2nd also with good incurved.

Mr. JOHN JEFFREY, gr. to Sir R. P. BEAUCHAMP, Bart., was 1st with twenty-four Japanese, there being a very keen competition. Mr. PETRE, Westwick House, being a close 2nd.

The class for thirty-six blossoms, three each of twelve varieties, brought some very fine blossoms from Mr. H. OGLE, gr. to the Marchioness of LOTHIAN, but they were staged low, and largely light in tint. Mr. PETRE was 2nd. Most of the exhibitors ranged their blossoms in diagonal lines, which we thought imparted to the stands a confused appearance.

There was a good competition in the class for six blossoms of Japanese. The best White shown in sixes was Madame Carnot, some very fine flowers were staged; the best six of any other colour was Phoebe. Mr. HANSON had the best stand of twelve varieties introduced since 1893, Phoebe, G. J. Warren, Madame Carnot, Edith Tabor, and others of recent introduction being in good character.

Mr. HANSON had the best twenty-four incurveds, winning easily; Mr. W. HATHORPE, Cambridge, had the best twelve; while there was a brisk competition with six blossoms. The best six of any one variety of incurved was C. H. Curtis, from Mr. HANSON.

Some very good anemone-flowered varieties were shown by Mr. J. A. KENDROW and Col. ROUS in twelves; Mr. W. HATHORPE taking the 1st prize with six. Col. ROUS had a collection of Pompon varieties, the best we have seen this season, not only taking the 1st prize for twelve bunches, but securing also one of the Certificates of the National Chrysanthemum Society as a special award. Reflected blossoms were also seen in good condition.

Fruit was somewhat sparingly shown. Mr. B. E. FLETCHER had the best collection of six varieties.

The display of vegetables was very extensive, and remarkably good. Messrs. Sutton & Sons, Reading; Daniels Bros., of Norwich, and others, offered prizes for their specialties, and they were numerous shown.

Miscellaneous collections of cut flowers were staged, especially by Mr. J. GREEN, Norfolk Nursery, Dereham, who had many fine novelties. Messrs. DANIELS BROS. had two effective stands, one of plants and flowers, and another of fruits and vegetables.

STOCKPORT CHRYSANTHEMUM.

NOVEMBER 19, 20.—The tenth show of fruit and flowers was held on the above date in the Volunteer Armoury. The exhibition was the best that the Society has yet had, and therefore a very fine one. The groups of plants this year were circular, and they were placed along the centre of the hall.

For the best group of plants a Silver Cup was offered, and this was won by Captain T. H. SYKES (Mr. J. Roderick, gr.), Chingle House, Cheshire. His group was well arranged; a graceful Kentia Palm formed the centre-plant, then the Chrysanthemums, finished off with Ferns and small foliage-plants; ABEL BUCKLEY, Esq., was 2nd (Mr. W. Hough, gr.).

In the group of miscellaneous plants arranged for effect, also placed in the centre of the hall, the same exhibitor held the same positions.

Of specimen plants of Chrysanthemums, the chief exhibitor was G. H. GADDUM, Esq. (Mr. Bradburn, gr.), who showed splendid plants of Chas. Davies, Viviani Morel, Marie Hoste, and others, with fifteen or sixteen fine flowers, almost equal to exhibition quality.

There were five competitors for six table plants, and all were good, the 1st prize being won by G. H. GADDUM, Esq.

The chief interest lay in the cut-bloom competitions. A Silver Cup was offered for the best twelve incurveds and twelve Japanese, and was taken by R. W. HARTLEY, Esq., Bampton Bryan Hall, Hereford (gr., Mr. J. Robinson), who had fine blossoms of many novelties; Capt. T. H. SYKES was 2nd.

Amongst local exhibits, JAS. WATTS, Esq. (gr., R. MacKeller), Abney Hall, Cheshire, obtained three 1st prizes, which included a Silver Cup and a Silver Medal. His best bloom was Madame Gustave Henry, which was selected by the judges as the finest bloom in the exhibition.

There were other less important classes for Chrysanthemum blossoms, and several competitions in fruits and vegetables.

Mr. ROBERT HOLLISTER is the Hon. Secretary, and to his efforts was largely due the very successful exhibition.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 22.—A meeting of the Floral Committee was held at the Royal Aquarium on the above date.

From Mr. H. WEEKS, The Gardens, Thrumpton Hall, Derby, came blossoms of Joseph Chamberlain, singularly bright in colour, of a brilliant chestnut with a bronzy-gold reverse; large, full, and likely to be most useful as an exhibition variety, supplying a colour much needed in stands (First-class Certificate of Merit).

From Mr. WILLIAM WELLS, The Nurseries, Epswood, Red Hill, came incurved Madame Ferlat, a large compact white flower of the shape, size, and build of C. H. Curtis (First-class Certificate); and Julia Scaramanga is a large, deep, and somewhat conical Japanese of the same shape of Madame Carnot; the colour pale reddish-orange and brown, long drooping florets at base, quite distinct and novel (First-class Certificate).

Japanese Don de la Madone, a medium-sized white variety with narrow florets, forming a dense ball-like mass, from M. ANATOLE CORDONNIER, Bayonne, France, was commended.

Incurved Mrs. A. E. Fever, dark bronze, base paling towards the centre, the reverse bright gold, a very promising variety, from Mr. A. FEAYER, The Gardens, Ash Lawn, Benenden, the Committee wished to see again.

Japanese Sarpasse Amiral, soft yellow in tint, the large incurving florets very broad, from Mr. W. WELLS, is highly promising.

The monthly meeting of the committee took place at Anderton's Hotel on the 22nd inst., Mr. T. W. SANDERS presiding. The Secretary reported that the December exhibition on the 7th proximo would be held in the Western Gallery of the Aquarium, the whole space of which would be given up for the purpose. Complaints were received as to the defective lighting of the building, and also as to the names of many of the flowers being written in pencil, rendering the deciphering of the names very difficult. The

Secretary laid upon the table a specimen of a small Gold Medal, which it is the intention of the Society to offer, and the same was approved. It was unanimously resolved that the dates of the meetings of the General Committee in 1898-9 be:—Aug. 29, Sept. 26, Oct. 24, Nov. 28, and Dec. 19, 1898; and Jan. 16, 1899. That the meetings of the Floral Committee be held at the Royal Aquarium on Tuesday, September 6, October 11, and December 6, these being show-days; and on Mondays, September 26, October 24, October 31, November 14, November 21, November 28, and December 12, the meeting-hour to be 1 o'clock on all occasions. It was resolved that the Classification Committee be instructed to meet and consider the classification of the new incurred and other Chrysanthemums, and that Mr. W. Higgs be appointed a member of the committee in the place of Mr. R. Owen, deceased. It was also resolved that this committee undertake the drawing up a list for publication, as a guide to exhibitors, of Chrysanthemums which are too much alike or may be regarded as synonymous. A motion to the effect that the November exhibition be continued for four days, with a competition on the first and third days, was defeated by a large majority. Two Fellows and sixteen ordinary members were elected, bringing the number of the latter up to 100 as elected during the present year. A vote of thanks was passed to the Chairman for presiding.

THE ANNUAL DINNER.

The members and a few friends of this society met on Wednesday evening last, at Anderson's Hotel, Fleet Street, to celebrate the principal social event of the year. Chrysanthemum growers have abundant enthusiasm, and the proceedings at the annual dinner were characterised by this desirable element. Beyond this, however, there were other circumstances that made the event this year a most pleasant one, and members who had been present at the two last dinners, were agreeably impressed in favour of the one just held.

Mr. T. W. Sanders (chairman of the general committee), made a capital president, genial, but firm, in pushing through the rather long programme. He was supported by many of the best known officials and members of the society, and for the rest, the room was as full of guests as desirable. None the less, regrets were sincere that Sir E. Saunders, the president, and Mr. J. R. Starling, who has been treasurer for so many years, were unable to be present. Immediately grace had been said, and the loyal toasts given, the chairman rose to propose that of "The Glorious Chrysanthemum and its Devotees," and in doing so, Mr. Sanders delivered a speech, in which he most eloquently pleaded the claims, virtues, and "glory" of the flower, coupling with this toast the National Chrysanthemum Society. The chairman had recently visited growers in the East End of London, and there, in the dingiest alleys, were seen plants that were given extraordinary care and attention. There, was evidence of the Chrysanthemum appealing to a class that, but for this plant, would probably have no connection with horticulture whatever.

In the suburban greenhouse, in the conservatories of the rich, and in the nurseries of the trade, when few other flowers were obtainable, and there was little sun, but much fog, were these handsome displays of Chrysanthemums. East, west, north, and south the flower had knit together every class more perfectly than any other. The National Chrysanthemum Society had contributed very largely to effect this, not only by holding exhibitions, but by disseminating useful literature upon the subject, and by affiliating societies in many parts of the globe that carried out in those parts work similar to that done here. There were now 148 affiliated societies, and ten had been added since January 1, 1897.

"The Donors of Special Prizes" was appreciatively proposed by Mr. Geo. Gordon, and responded to by Mr. P. Waterer and Mr. H. J. Jones. Mr. Waterer complained of the great noise, and of the absence of light and ventilation at the Royal Aquarium, and hoped ere long the Society would be in a position to exhibit its display in a hall more fitted to the purpose.

Referring to the great Edinburgh show, Mr. Waterer said he had gone there in preference to concentrating his efforts in London, because at Edinburgh was "the biggest thing to go for;" and he hoped that the National Chrysanthemum Society would take care that the best reward for the exhibition of Chrysanthemums offered in the United Kingdom should in future be offered in London, and by the National Society.

An interesting incident was the presentation of The Challenge Trophy, Cups and Medals, that had been won. The National Challenge Trophy was handed to J. Scott, Jun., Esq., Vice-President of the Bromley Society, who proudly accepted it for this Kentish Society, which has now won it for the second time. The blooms were contributed by ten of its members. Mr. W. Mease was greeted with cheers as he was given both the Holmes' Memorial Cups. Mr. C. Davis received the Turner Memorial Cup for his father, Mr. N. Davis of Framfield. Gold Medals were presented to Mr. H. J. Jones, Messrs. Cutbush & Sons, Mr. W. Wells, and others; and Silver Medals to various exhibitors. Mr. Mease, who had the best Japanese bloom in the show, in a bloom of a yellow variety of Madame Carnot, was presented with a painting of the flower, being a special prize by Mr. J. C. Simpson.

The officers of the Society were toasted by Mr. J. W. Wilkinson (Royal Aquarium), and Mr. R. Ballantine, and Mr. Harman Payne responded. Other toasts included "The

Chairman," "The Secretary" (Mr. R. Dean), "The Visitors," and "The Press."

In replying to "The Secretary," Mr. Dean took occasion to refer to the exceeding amount of work there was now associated with the Secretaryship, and he felt that in the near future he should have to ask the committee to relieve him of some of this. The toasts were interspersed with vocal and instrumental music.

A WORKMAN'S INSTITUTE AT TURNFORD HALL.—An institute and hall for the use of the employees of Mr. T. Rochford, at the Turnford Hall Nurseries, was formally opened on Saturday, November 20. The building consists of a dining, concert, library and reading, and committee rooms, together with sleeping accommodation, kitchen, and lavatories, and was erected by Mr. Rochford to furnish a long-felt want. About seventy persons sat down to dinner, and at the termination of which Mr. W. Long, on behalf of the members of the institution, presented Mr. Rochford with an illuminated Address in commemoration of the opening of the building.



[The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	Above (+) or below (−) the Mean for the week ending November 20.	ACCUMULATED.			No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.					Below 42°, difference from Mean since January 3, 1897.
					More (+) or less (−) than Mean for the Week.			

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing District;—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts;—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending November 20, is furnished from the Meteorological Office:—

"The weather was in an unsettled condition during the earlier half of the period, with considerable falls of snow and sleet in the north and north-west, and a good deal of rain elsewhere. Later in the week the weather became fair and dry generally, but with local fogs and mists over England."

"The temperature soon after the commencement of the week became temporarily low in Scotland, and the change subsequently spread southwards to England and Ireland. By the 17th, however, the thermometer had risen again, and the average values of the week were above the mean in all districts, the excess ranging from 1° in 'Scotland, N.' to 4° in 'Scotland, E. and W.' and 'England, N.E. and E.' to 5° in 'England, S.' and the 'Channel Islands.' The highest of the maxima were recorded on rather irregular dates, and ranged from 61° in 'England, N.W., E., S., and the 'Channel Islands,' to 55° in 'Ireland, N.' The lowest of the

minima were registered either on the 16th or 19th, and ranged from 12° in 'Scotland, E.' (at Braemar), and from 20° in 'Scotland, N.' to 34° in 'England, S.' and to 40° in the 'Channel Islands.'

"The rainfall exceeded the mean in 'England, N.E., and N.W.,' and also in 'Ireland, S.,' but was less than the normal in all other districts. Heavy rain occurred on Tuesday or Wednesday in the south and south-west of Ireland, and at Holyhead."

"The bright sunshine was less than the mean in nearly all districts, but exceeded it in 'England, E.' The percentage of the possible duration ranged from 33 in 'England, E.' to 25 in 'Ireland, S.,' and 24 in the 'Channel Islands,' to 17 in 'Ireland, N.,' and to 8 in 'Scotland, N.'"

MARKETS.

COVENT GARDEN, NOVEMBER 25.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms...	4 0-6 0	Orchids:—	
Bouvardias, pr. bun.	0 4-0 6	Cattleya, 12 bms.	6 0-9 0
Carnations, pr. doz.		Odontoglossum	
blooms ...	1 0-3 0	crispum, 12 bms.	1 6-3 0
Chrysanthemums,		Pelargoniums, scar.	
p. doz. blooms ...	0 6-2 6	let, per 12 bun.	4 0-6 0
— p. doz. bunches	8 0-6 0	— per 12 sprays...	0 5-0 8
Eucharis, per dozen	4 0-6 0	Pyrethrums, per 12	
Gardenias, per doz.		bunches ...	1 6-2 6
blooms ...	2 0-3 0	Roses, Tea, per doz.	0 6-1 0
Hyacinth, Roman,		— yellow (Pearls),	
dozen sprays ...	0 0-1 6	per dozen ...	2 0-4 0
Lilac, French, per		— red, per dozen	1 0-2 0
bunch ...	3 0-4 0	— pink, per doz.	1 6-2 6
Lilium Harriol, per		— Safrano, p. doz.	1 0-2 0
doz. blooms ...	4 0-6 0	Roses, per doz. bun.	4 0-6 0
Lily of the Valley,		Stephanotis, dozen	
dozen sprays ...	1 0-2 0	sprays ...	3 0-4 0
Maidenhair Fern,		Tuberose, 12 hms.	0 8-0 4
per 12 bunches...	4 0-8 0	Violets, 12 bunches	1 6-2 0
Marguerites, per 12		— Parma, French	2 0-2 6
bunches ...	2 0-4 0	White Narciss.	
Mignonette, ds. bn.	2 0-4 0	French, 12 bun...	9 0-1 6

UNBRED-BLOOM IN VARIETY.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Evergreen shrubs,	
Aspidistra, per doz.	12 0-30 0	in variety, doz...	6 0-24
— specimen, each	5 0-15 0	Ferns, small, doz...	1 0-2 0
Chrysanthemums,		— various, doz.	5 0-12 0
p. doz. pots ...	5 0-9 0	Foliage plants, per	
— specimen, or		dozen ...	12 0-36 0
large plants, ea.	1 6-2 6	Liliums, various,	
Dracenas, each ...	1 0-7 6	per dozen ...	12 0-18 0
— various, p. doz.	12 0-24 0	Marguerites, p. doz.	6 0-9 0
Erica, various, per		Mignonette, p. doz.	4 0-6 0
dozen ...	9 0-18 0	Palms, various, ea.	2 0-10 0
Ficus elastic each	1 0-7 6	— specimens, ea.	10 6-84 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples (Blenheim Orange), selected, per bushel ...	9 0-10 0	Grapes, Muscats, "Cannon Hall," per lb. ...	2 6-5 0
— (Wollingtons), selected, bush.	8 0-9 0	— Muscats, selected, per lb. ...	3 0-3 6
— common var., per bushel ...	2 6-4 0	— Muscats, 2nd quality, per lb.	1 6-2 0
— ordinary qual., per bushel ...	6 0-6 6	Nuts, Cobs, per 100 lb. ...	21 0-22 6
Grapes, Gros Colmar, per lb. ...	1 6-2 0	Pears, stewing, per bushel ...	4 0-6 0
— 2nd qual., lb.	1 0	Pine-apples, St. Michael, cases containing 6 to 8 ...	3 6-4 6
— Alicante, p. lb.	1 6-1 9	— cases containing 10 to 12 ...	1 3-1 9
— 2nd quality, per lb. ...	0 10 1 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per doz. ...	4 0-4 6	Onions (pickling), per pocket ...	2 0-3 0
— Chinese (Macha-chys tuberifera), per lb. ...	0 3-0 4	— Dutch, per bag	3 0
Beans (Madrera), per bushel (about 6 lb.) ...	1 0-1 6	— Albanian, per bag ...	4 6-5 0
— French, Channel Islands, lb.	0 6-1 0	Radish (long scarlet), Channel Islands, per 12 bunches ...	0 6-0 8
Beetroots, p. bush.	1 3-1 6	Salad, small, per doz. punnets ...	1 6
Capsicum, Chili, p. 100 ...	1 6	Seakale, per punnet (3½ to 4 lb.) ...	1 3-1 6
Cauliflowers, per tally (5 doz.) ...	5 0-6 0	Shallots, per lb. ...	0 2
Cucumbers, home-grown, select, per doz. ...	4 0-5 0	Sprouts, per bushel ...	0 9-1 0
Garlic, per lb. ...	0 2	Tomatoes, selected, per doz. lb. ...	6 0-7 0
Horseradish (German), per bundle	1 0-1 3	— Medium, doz. lb. ...	3 0-4 0
Mushrooms (Indoor), per lb. ...	0 8-0 10	— Seconds, doz. lb. ...	1 6-2 0
		— Canary Islands, per case, 56 lb.	8 0-9 6

POTATOES.

No material alteration in Potato trade since last report, prices ruling as follows:—Snowdrops, 85s. to 110s.; Up-to-dates, 85s. to 115s.; Maincrops, 80s. to 100s.; Saxons and Bruce, 80s. to 95s.; Blacklands, 70s. to 75s.; Belgian and Dutch Ware, 3s. to 5s. 6d.; German Ware, 3s. 3d. to 4s. John Bath, 32 and 34, Wellington Street, Covent Garden, W.C.

(Remainder of Markets carried forward to p. vii)

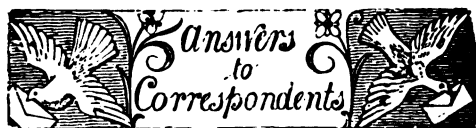
ENQUIRY.

"He that questioneth much shall learn much."—BACON.

CHRYSANTHEMUM MADAME CARNOT.—I for one, says Alex. Morton, a north-country contributor, should be obliged if some successful cultivator would instruct Chrysanthemum growers the best times to strike, stop, and take the bud of the variety Madame Carnot, so that it may be in full flower by November 15. I have five plants that were treated in different ways, but they are all flowering too late. The plant No. 1 was struck from cuttings, put in November 1, 1896, grown straight on, and the crown-buds taken August 14; it is still in bud. The cuttings of No. 2 were put in November 8, pinched May 1, and the second buds taken September 1; this one has half-opened blooms, and promises well. The cuttings of No. 3 were put in November 8, the crown-buds taken August 14; this one is still in bud. The cuttings of No. 4 were put in November 8, pinched May 1, the second buds taken August 28; this one is about one-fourth expanded. The plant No. 5 was cut hard-back in the first week of May, and the first buds taken. The blooms are also very late, as there is as yet no sign of any colour. I may state that this garden is in the north of Perthshire.

Will any reader kindly afford J. J. a hint as to the cultivation and fruiting of the Custard-apple, *Anona reticulata*, described in the *Botanical Magazine* as a stove evergreen shrub?

☞ "A Subscriber—Midlands," would be glad to know what are the duties of a nursery-clerk, the kind of books he has to keep, and the best work to study on the subject of book-keeping?



ALMANACK: J. C. Most of the gardening journals publish an almanack with their first issue of the New Year: but we think that what you mean is the *Garden Annual*, or *Horticultural Directory*. The first is published at the Garden office, 37, Southampton Street, W.C.; and the other at that of the *Journal of Horticulture*, 171, Fleet Street, E.C.

BOOKS: R. B. Inexpensive books upon the culture of the Chrysanthemum have been published by Mr. Ed. Molyneux. Messrs. W. & G. Drower, Fareham; Mr. W. Wells, Karlswood Nurseries, Redhill, and others.

BROKEN FLOWER-POT: E. M. We note the neat manner in which the pot is mended; and, doubtless, many gardeners would be pleased to know what is the kind of cement used to join the pieces together, and if the cement is unaffected by moisture.

CAMELLIA FLOWER-BUDS FALLING: D. J. This may be due to a natural effort of the plant to get rid of a portion of the flower-buds when these have set very thickly; also to proximity to the heating apparatus, although this happens only during hard weather, when the hot-water pipes have to be made very hot; and it may be brought about by keeping the soil too moist at this season. The happy medium has to be struck between dryness and wetness. If the drainage be not in good order, the soddening of the soil with only moderate applications of water will soon be brought about; and in the case of large plants in tubs, it is not easy to ascertain the condition of the soil without turning the plants out of the tubs. The re-tubbing, surfacing, and other operations of that kind should be undertaken in early spring, or early in August after growth of the wood has ceased.

CAMELLIA SEEDS: *Market Study.* Sow the seeds now, in well-drained pots filled with a mixture of finely sifted loam two-thirds, peat or leaf-mould one-third, and sand sufficient to make it porous. Sow thinly, say 1 inch apart, cover with half an inch of soil, water with a fine rose can, and stand the pots in a cold pit to which the frost has not access. The soil should be kept from getting dry, and this is best done by standing the pots on the floor.

CARDIFF SHOW: A CORRECTION. It was stated in our report that the Cup, value 4 guineas, was won by Messrs. Case Bros. These nurserymen were the givers of the Cup, and the winner was Mr. Joy, gr. to R. A. Bowring, Esq.

CARNATION: B. C. M. It does not strike us as being very valuable, but as you state that it is not a representative bloom, the seedling may be worth preserving.

CHRYSANTHEMUM GOOD GRACIOUS: B. P. This is a "weak-necked" variety, and the flowers usually droop. In the case you mention, perhaps the bloom is rather less heavy than usual in proportion to the strength of stem. We suppose the plant has not "sported"?

COMMON BROOM: *Broom.* The plants may be cut down at any time from now till April.

FLOWERS OF CYMBIDIUM LOWIANUM FALLING: D. J. Flowers of Orchids fall from a variety of causes, and in winter the fog and damp are the more common ones. Very low temperature will cause the flowers to drop in the case of Orchids from tropical regions.

INSECTS: E. F. *Wills.* The insects working-up in "small heaps," between the bricks on the floor of the Mushroom-house, belong to the order Collembola, or "spring-tails," and to the genus Lipura (which is not spring-tailed); the species is probably *L. fimetaria*, but there are several very closely allied. They live under boards, in damp earth, and in manure. Their food is humus and decaying vegetable-matter, and it is doubtful if they can ever be considered injurious; but a Mushroom-bed is just the position in which a suspicion of being noxious might reasonably exist. If repeated applications of petroleum will not stop them, try strong solutions of carbolic acid in boiling-water, or cover the bricks with cement. These insects are extraordinarily prolific. R. McL.

LATIN NAMES: C. W. If you are not conversant with Latin, or the rules of botanical nomenclature, it is not surprising that you find some anomalies and much difficulty. *Berberis Aquifolium* is right; the spelling of the specific name with a capital letter denotes to a botanist the fact that aquifolium was once a generic name. Undulatum and nanum are correct in the case you mention, but if the word *varietas* or the abbreviation var. be used, then you must use the feminine undulata, nana, &c., because *varietas* is feminine. Spicata is preferable to spica, but it is generally better to retain an old name than to give a new one, hence *Cupressus Lawsoniana albo-spica* is in common use. *Ceanothus* and *Rubus* are masculine. *Macrophyllum* is applied to a plant with large leaves. *Handsworthiensis* implies that the plant was raised at or distributed from Handsworth. *Prunus triloba* is correct, *P. biferum* is incorrect; it should be *P. bifera*.

MIXED HYBRIDS OF GLADIOLUS GANDAVENSIS IN AMERICA: R. Macfee. The American gardening papers doubtless mention these plants, but we have no recollection of having seen any notes on them.

MUSHROOM BEDS: R. S. The spawn, after running, was checked in development by the dryness of the beds, and if it remains in the same condition after you have afforded water, we should imagine that your best course would be to afford a soaking of warm water, with a handful of salt to a 3-gal. water-can, well dissolved, and then applied. If this, together with a thicker covering of litter under the mats, does not induce Mushrooms to appear, nothing else will, as not only will the spawn be dead, but there will be no more heat left in the material. The sandy soil used is not of the right kind.

NAMES OF FRUITS: A. M. Grapes: Mrs. Pinco's Black Muscat.—J. H. W. Apples: Egg or White Paradise.—Kimbrell, Apple: Hambledon Deux-ans. The name you give, Old Denson, is evidently a corruption of Deux-ans (of the French).

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—C. K. *Cymbidium Mastersii*, also known as *Cyperorchis Mastersii*.—H. C. P. A very fine variety of *Cattleya labiata*, but scarcely worthy of a distinguishing name in view of the many fine varieties of it which have already appeared.—G. T. *Poinsettia pulcherrima* (the scarlet), and *Fittonia argyrea*.—*Constant Reader.* You could not do better than procure the work on Roses you name. The silvery-leaved hardy plant is *Stachys lanata*.—R. B. *Iris pseud-acorus*.—A. B. *Euonymus europæus* (Spindle-tree); 2, *Cedrus atlantica*, or Libani, we cannot tell which from the specimen; 3, *Abies nobilis*; 4, *Juniperus virginiana*; 5, *Cryptomeria japonica*;

6, *Abies Pinsapo*.—E. R. *Celtis occidentalis*, perhaps *Acer palmatum* var. Specimens inadequate, and badly packed.—H. G. *Cotoneaster frigidus*.

ROMAN HYACINTHS: *Market Study.* Like other Dutch bulbs for flowering early, they must be procured and potted as soon as they can be obtained, and they must then be kept in the dark till the soil is filled with their roots, and the crown of leaves containing the flower has pushed up some 2 inches or more. The bulbs may be grown thickly together in pots, jardinières, boxes, &c. To have them in flower early, it is necessary to put them into a warm house of 60° to 70°, on shelves near the light, first pushing them on in a hot-bed having a warmth of 75°, if you have it; but they do fairly well without this help. Do not stand them on the ground as you suggest, unless the ground is but a short distance from the glass, and no plants are grown overhead. Of course, if you are growing them wholesale for cutting for market, a little drawing of the flower stem is no disadvantage.

SICK BENEFIT SOCIETY: *Staley.* The United Horticultural Benefit and Provident Society undoubtedly offers a better investment to young gardeners than any such society you name. For reasons that have been frequently stated in these columns, we would strongly advise you, or any other young gardener, to choose the one special to the profession. Send an application for particulars to the Secretary, W. Collins, 9, Martindale Road, Balham, S.W.

SOUVENIR DE LA MALMAISON CARNATIONS: J. K. We must suppose that the cultivators of these varieties of the Carnation have nothing further to add to what has already appeared in the gardening journals. These Carnations do not seem to be "everybody's" plants; whilst the ordinary Tree, or perpetual Carnation, anyone with a cold pit or greenhouse can succeed in growing satisfactorily. Growers of "Malmaisons" please note.

SWEET PEAS: J. B. & Sons. It is to be expected that some varieties should be sterile. There is every degree of fertility among the variations, and you have unfortunately got hold of a sterile form. Next season try artificial fertilisation.

TENNIS LAWN: A. R. If it has not been mown since August, the grass will be long, and will require mowing with a scythe. In doing this, cut pretty close, rake off the mowings with a wooden rake, then sweep it with a half-worn-out broom; finally giving it a thorough rolling. It may need re-turfing in places that are worn, or sunk below the proper level. A dressing of sifted loam and stable-manure, or this kind of manure alone, may be used during the winter, raking off what has not sunk into the turf in March.—*Tennis Player.* If the grass has come up thinly, you might strew finely-sifted loam three-quarters, woodashes quarter, over the lawn during the winter so as to partially hide the grass. It is now rather late to sow grass seed; moreover, owing to the seed lying long before germinating, the seed-eating birds might devour a large proportion of them, and it will be better to wait till April before sowing the following grasses, *Poa trivialis*, *Alopecurus pratensis*, and *Festuca duriuscula*, together with a little (one-eighth of the whole bulk) of *Trifolium minus*. These seeds may be scratched in with a fine-toothed rake, or be very lightly covered with loam and woodashes. The clover (*Trifolium*) had better be sown first, evenly and thinly. It will die out in about three years, leaving a thick mat of grass. The frequent use of the roller is a matter of importance, and it is of great use in consolidating the surface, and causing the outward growth of the grasses. The extirpation of weeds and coarse grasses must receive attention from the first, and the scythe should be employed in preference to the mowing machine for the first two years.

VICTORIA MEDAL: B. Yos; we quite concur that the two horticulturists you name have as great, or greater, right to the honour than most of those who are included; but there is no getting over the numerical limitation. Should Her Majesty's life be prolonged for another ten years, then will be the time for the conferment of seventy additional medals! and then something may be done to remedy the defects of the present list. We cannot enter into personal details.

COMMUNICATIONS RECEIVED.—F. C. Heinemann.—P. W.—E. C.—E. J. L.—H. Low & Co.—J. C. B. Haarlem.—J. F. H.—H. R.—G. F.—C. R.—M. D.—F. W. B.—T. E. H.—T. C.—J. J. W.—G. W. S.—J. Lazenby.—Ladron.—T. F. W. L. Y.—D. R. W.—A. D.—W. F. M.—J. Snell.—D. T. F.—C. S.—A. J. S.—H. J. M.—H. W.—G. H. H.—R. Halliday.—J. Campbell.—B. H.—W. McC. (we should think not).—F. Warr.—E. M. P.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 4, 1897.

CHARLES C. BABINGTON.*

It is not possible to do otherwise than receive with the greatest respect and sympathy a work dedicated by his widow in such touching terms to the memory of Professor Charles Cardale Babington. Anything like criticism seems out of place, and yet it is difficult to suppress a feeling of disappointment at the picture here presented to us. Professor Babington's name was not only a household word to successive generations of British botanists, but he was a resident in Cambridge for nearly seventy years, and a University Professor for more than thirty. During that time how vast and far-reaching has been the progress and the change in scientific thought, how great the difference in Cambridge itself! We find in the pages of the volume before us but faint indications of changes so great as to be almost revolutionary.

What we have is a sympathetic memoir of a patient, thoughtful, accurate, fair-minded, eminently religious man, deservedly beloved by those who were brought into personal contact with him. With strong convictions, he was yet averse from controversy; with a well-defined religious creed, he was yet not only tolerant, but, as far as possible, sympathetic with others who held different views. Our disappointment, if we can call it such, resides in the fact that in the present volume we find so feeble an echo of scientific and University progress—matters in which Babington could have had no mean share. We hear indeed of them, but, as it were, at a distance, and we learn but little of the part that Babington himself took in them.

The book opens with a well-written memoir by Professor Mayor, followed by a series of "Reminiscences" from personal friends, but few from botanists (excepting one from Mr. Britten) competent to give a general view of his botanical work, and yet no one exercised a greater influence in his own sphere than did Babington. His work in bringing the descriptive history of British plants in a line with that of the European Continent was an important step in advance. His careful and conscientious study of Brambles from 1846 to the end of his career, revealed an amount of variation which if not unsuspected was not previously fully

realised. There seem to be so many intermediate forms that it is hopeless to expect agreement as to their identity and nomenclature among students of the genus. A similar remark applies to the Hawkweeds, and to the Water-buttermugs, also favourite objects of Babington's study. The Professor himself was very cautious in drawing any inferences or inductions from the enormous mass of observations made by him in the field, in the herbarium, or in the garden, for a quarter of the Botanic garden was devoted to the cultivation of species of Bramble! Babington's tendency was to consider as of specific rank forms which others, belonging to a different school, treated as mere variations, not yet sufficiently fixed to warrant them being estimated as species. Thus, to give one illustration only, whilst Babington considered *Cuscuta trifolii* to be a species, Hooker does not even think it worthy of sub-specific rank, but makes it a variety of *C. epithymum*.

It is of very little consequence whether Professor A. considers a particular form as a "species," while Professor B. looks on it as a "variety." What is of consequence is, to ascertain the precise differences [that exist, to endeavour to find out the reason for those differences, their significance, and the precise relation they bear to other forms. Professor Babington's works, and his collections at Cambridge, though he himself paid relatively little attention to such matters, will be of great value to naturalists in search of evidence, and desirous of estimating its relative importance.

Reverting to the work before us, we find after the Reminiscences a reprint of his Journal from 1817, or thereabouts, to 1891. Babington's life was not a very eventful one, and a large proportion of the extracts might have been omitted, as adding nothing to the portraiture of the man, nothing to the history of botany, and as of no interest to the botanist or to the general reader. Of what use is it to print such entries (of which there are many) as "October 6, Cambridge;" "December 18, Cambridge;" "January 19, Linnean," &c. One entry we have found may interest our readers. It bears date July 6, 1847, the period when Prince Albert, as he then was, was installed as Chancellor of the University:—

"Horticultural show in Downing grounds. Went there at 11 A.M. to judge the 'specimen-plants in pots.' A great crowd of people in the afternoon. Between 9000 and 10,000 tickets sold, and many people got in without, either over the fences or through the gates, which were forced open by the press, and obliged to remain so for some time. The Queen went there. We dined together in the tent after it was all over."

Following the Journal, come extracts from his botanical correspondence, dating from 1834 to 1894, to which the same remarks apply as to the Journal, but to a much less degree. The letters, indeed, afford ample evidence of his patience and willingness to give assistance, and will be read by botanists with great interest as they contain so many notes on critical plants. The work is carefully printed, has an excellent index, and an admirable portrait, so that it will form an acceptable memorial to the friends of the late Professor, and an interesting record to the historian of British botany.

NEW OR NOTEWORTHY PLANTS.

PASSIFLORA PRUINOSA, Mast, sp. n.*

THIS is a beautiful and distinct Passion-flower (see fig. 117, p. 401), lately discovered by Mr. Im Thurn, and introduced from British Guiana by Messrs. Sander & Co. The leaves are glabrous, palmately three-lobed, subpeltate, green above, glaucous beneath, with the veins of a violet colour; the petioles are long, and provided with four to six cup-shaped glands. The stipules are a remarkable feature of the plant, being very large (2 inches long, $\frac{3}{4}$ inch wide), leafy, cordate, obliquely-oblong. The flowers are solitary on long axillary stalks, with three leafy oblong bracts near the top. The flower measures about 3 inches across when fully expanded; the tube short, fleshy, lobed, intruded at the base. Sepals oblong obtuse, aristate, glaucous-green externally, pearly within; petals rather shorter than the sepals, pale violet. Fauxial corona of very numerous threads, the outermost rows almost as long as the petals; deep violet at the base, in the centre yellowish, and curly at the apex; the succeeding rows are about half the length, thread-like, capitate, whitish or yellowish; median corona white, membranous, at first bent downwards, afterwards turning upwards and dividing into numerous erect threads, each hooked at the base. The other parts of the corona are relatively inconspicuous, and being described in the foot note, need not be further mentioned here.

The species belongs to the *Granadilla* section, the section which includes the greatest number of showy species, and among the *Granadillas* it may be relegated to a small subsection, in which the membranous or median corona is deflexed, and afterwards assurgent. In the size of the stipules it somewhat resembles the figure of *P. stipulata*, Aublet, but the form of the stipule, and especially of the leaf, is quite different. *Maxwell T. Masters.*

MILTONIA BINOTI, Cogn., n. sp.†

A plant recalling some forms of *M. candida*, the pseudo-bulbs, the leaves, the size and form of the flowers are nearly identical with those of the latter plant. The sepal and petals are cinnamon-brown, with the apex, a narrow margin, and one or two imperfect transverse bars of pale greenish-yellow. The lip, scarcely shorter than the lateral sepals, is broadly obovate, bright violet-purple veined with darker

* *Passiflora pruinosa*, Mast, sp. n., (f. *Granadilla Deflexa*).—Fruticosa scandens; ramis herbaceis teretibus fistulosis glabris rubro-lineatis; foliis remotis, petiolis 10–12 cent. long., teretibus glandulis cupulatis 4–6 dissitis munitis; stipulis 5 cent. long., 2 cent. lat., foliaceis oblique cordatis falcato-oblongis margine parum glandulosis, laminis 18 cent. long., 23 cent. lat., foliaceis, superne laete viridibus subtus glaucis, nervis violaceis, subpeltatis basi rotundatis ad medium trilobatis, sinubus latis, lobis divergentibus oblongo-lanceolatis, margine parum glandulosis, lobo medio longiore; pedunculo axillari 1 floro; bracteis flori approximatis verticillatis foliaceis cordato-oblongis; floribus diametro 8 cent., tube brevi ventricoso longitudinaliter sulcato basi intruso; sepalis herbaceis circa 4 cent. long., oblongis cucullatis aristatis dorso viridibus intus lacteis; petalis parum brevioribus pallide lilacinis; corona faucialis pluriseriali filamentosa, filis extimis petala subaequantibus basi intense violaceis ad apices capillares curvatis albidis flavescens, filis intimis numerosissimis exterioribus dimidio brevioribus lilaceis capitatis albidis; corona media basi tubulata membranacea albidis deflexa dein assurgente et in filis ascendens basi unctis dividente; corona infra mediana carnosula annulari deflexa angusta; corona basilaris membranacea cupuliformi gynophori basin cingente; gynophoro tereti glabro maculato; ovario oblongo glauco, stylis clavatis; fructu—seminibus oblongis obtusis.

Guian. Brit. Im Thurn.

† *Miltonia Binoti*, Cogn.—Pseudobulbis elongato-oblongis, valde compressis, levibus, apice diphylis; foliis elongatis, lineariliguatis, acutis, basi constrictis, laete viridibus; pedunculo communi erecto gracili, teretisculo, plurifloro, foliis brevioribus; bracteis linearilanceolatis, acuminatis, pedicellis brevioribus; floribus 7 cm. latis; sepalis petalisque aequilimis, p-tulis, anguste bilongis acuminatis, margine leviter undulatis; labello sepalis lateralibus vix brevioribus, p-tulo, usque ad basin libero, satis concavo sed non convulso, late obovato, apice rotundato-subtruncato et apiculato, margine lateraliter undulato et obscure 2–3-lobato, disco inferne 5-ristato, cristis medianis exterioribusque brevioribus; columna longiuscula, recta, subsemi-cylindrica, alis angustis, margine undulato-denticulatis, apice acuminatis; clinandrio margine angustissimo non membranaceo crescit in Brachia.

* *Memoria, Journal, and Botanical Correspondence of Charles Cardale Babington*, . . . (Cambridge: Macmillan & Bowd.)

lines, not curling like a horn round the column as in *M. candida*, but merely rather concave. The column, a centimetre long, is whitish tinged with lilac, the wings are narrow, the edges undulate-denticulate, ending at the top in a stout triangular acuminate tooth; the edges of the clinandrium are very narrow, and not furnished with a wide membranous border such as is the continuation of the anterior wings in *M. candida*.

It may be seen from these characteristics how *M. Binoti* principally differs from *M. candida* in the lip and the column, which organs much resemble, on the contrary, those of *M. Regnelli*, and especially those of its variety *purpurea*. We are disposed to consider this as a natural hybrid between those two species. *M. Binoti* was sent from Brazil by M. Binot, of Petropolis, to M. A. A. Peeters, of St. Gilles, Brussels, and at the request of the latter we have named it after the introducer. M. Peeters tells us that the first plant flowered November 21 last. *A. Cogniaux*.

VANDA CERULEA VAR. *PEETERSIANA*, *Cogn. n. var.*

This fine variety, remarkable for the complete absence of blue in the flowers, was shown in an importation from the Khasia Mountains, in November, 1896, by M. A. A. Peeters, horticulturist, of St. Gilles, Brussels. These are the characteristics of the plant:—Flowers very large, sepals and petals very pale lilacy-rose, rather brighter at the edges, and particularly towards the tip; lip rose, rather bright lilac towards the tip, shading insensibly to white towards the base, which is pure white, as is the spur, with a small spot of orange-yellow at the base of the disc; column white. The specimen which M. Peeters bloomed last November bore nine flowers. *A. Cogniaux*.

DENDROBIUM BARBATUM, *Cogn. n. sp.**

This species, which seems to us to be allied to *D. ciliatum*, comes from Upper Burma, where it grows in company with *D. Brymerianum*. It was introduced by M. De Lairese, a Liège grower, with whom it bloomed last June.

The stem, a rather yellowish green, is about 1 dec. high; it bears six or seven lanceolate linear, clear green leaves about two inches long. Racemes terminal, short, bearing four or five flowers almost wholly pure white. Sepals about a centimetre long, the lateral ones rather larger and lightly tinged with rose at the tip, while the rather long and obtuse mentum is yellowish-green. Petals erect, narrow; lip erect, trilobed, with very obtuse lobes, edged with long flexuous hairs; intermediary lobe larger than the others, yellow; the rest white. A few specimens of this species were introduced; one of them is in Sir Trevor Lawrence's collection, another was offered by M. De Lairese to the Royal Gardens, Kew. *A. Cogniaux*.

AUTUMN FLOWERS.

PLUMBAGO LARPENTE.—This little Chinese plant blooms so late in the season out-of-doors that it often fails to open its flowers unless the position of the bed is warm and sheltered, precautions especially necessary in the Midlands and the North. It is not a showy plant when observed at a distance, but a close inspection discloses flowers of a beautiful Gentian-like-blue colour, which is very pleasing; and the foliage and stems are also prettily tinted with red.

* *Dendrobium barbatum*, *Cogn. (Sect. Stachyobium)*.—Caulibus brevibus, profunde sulcatis, inferne satis gracilibus vaginis 2-3 vestitis, superne incrassatis plurifoliatis; foliis distichis, subcoriaceis, lineari-lanceolatis, acutis, basi breviter vaginatis; racemo subterminali, nutante, paucifloro, foliis brevioribus; bracteis membranaceis, anguste ovatis, obtusis, trinerviis, pedicellis paulo brevioribus; floribus satis parvis, submembranaceis, breviuscule pedicellatis; sepalis dorsali late lanceolato, acuto, inferne erecto, superne reflexo; sepalis lateraliibus paulo majoribus, triangulari-lanceolatis, acuminatis, erectis apice leviter recurvis; petalis erectis, lanceolato-rhomboides, acutiusculis, sepalis dorsali aequilongis; mento longiusculo, oblongo, obtuso; labello erecto, sepalis lateraliibus aequilongo, ambitu obovato-cuneato, distincte trilobato, lobis ovato-rotundatis, margine integerrimis et pilis elongatis flexuosis densiuscule ciliatis marginatisque, lobo terminali paulo majore intus puberulo, disco puberulo tenuiter biocostato; columna brevi, obtuse bidentata. Crescit in Birmania.

It may easily be increased by division of the root-stock in the spring; and as it does not grow more than 1½ foot in height, and has small flowers, it should not be placed more than 3 feet from the edge of the path.

Sternbergia lutea.—This pretty little Amaryllid is a native of Central and Southern Europe, and has been considered by some to be the "Lily of the field" spoken of in the Scriptures. Others suppose a species of *Anemone* to be the plant so designated, and, certainly, these are more "gloriously arrayed." The *Sternbergia* is perfectly hardy as far north as this, but it requires a warm position in order to flower it well, such an one as the front of a forcing-house, or border facing south, with a background of evergreens, suits it, and in such positions it throws up its yellow Crocus-like flowers at the end of October, and in November. Although by no means a plant that makes a striking mass of colour, it is very interesting to see its clear yellow flowers nestling among the green leaves when other out-door flowers are scarce, and it is often mistaken for a species of *Crocus*.

Phlox amena.—Although this plant makes its finest display in May, it also affords a number of blooms in late autumn; and at the present time, November 6, it is the gayest of all the outside flowers, commanding attention at once when seen in a mass. The present season is favourable to it, for the reason that severe frost has not occurred. It forms a useful permanent edging to beds and borders as one that is easily kept within bounds, and the leaves grow closely together. The best season at which to propagate the plant is the middle of the month of May, when it ceases to flower. The plants, or a sufficient number of them, should be dug up and pulled into small pieces, which soon make good plants if planted firmly, and afforded water until growth commences. It seldom exceeds 6 inches in height, and the blooms are of a pleasing rosy-pink colour. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

KEW NOTES.

RUBUS BIFLORUS.—For producing an autumn and winter effect there is nothing of its kind more striking than this *Rubus*. Several of the Brambles are noted for their white, or blue-white, bark in winter. *R. leucodermis*, *neglectus*, and *lasiostylus*, are among the number, but none of them, so far as my experience goes, equals this Himalayan *R. biflorus*. It is not inferior even to the beautiful Willows, *Salix daphnoides*, and its variety, *acutifolia*, which make so fine a feature in the Knap Hill Nursery every winter. There is a group of plants near the Flagstaff at Kew, which anyone interested in winter effects of vegetation, and to whom this *Rubus* is not known, ought to see. The thicket of white stems, 6 feet or 8 feet high, is conspicuous at a great distance, and even on dull days, but this afternoon (November 29) I happened to see the group with the low, almost level rays of the sun lighting up the stems, and this added greatly to the effect. Away from the smoke and black fogs of big towns it would doubtless show to greater advantage than it does near London, but here it is especially valuable because it thrives better than any of these white-barked shrubs. Owing probably to climatic disadvantages, the two Willows mentioned above, for instance, never at Kew put on the beautiful glaucous covering one sees in the country. The *Rubus* is a vigorous, quick-growing shrub, and should be planted in rich, loamy soil. The Kew plants are about three years old, and were raised from seed, which ripens occasionally during our hottest summers.

THE GOLDEN OSIER (*SALIX VITELLINA*).

There is not so much, perhaps, made of hardy shrubs with brightly-coloured bark as might be, yet if all of them were brought together, they would make quite a respectable list, and it is upon such plants to a very great extent that we have to depend for colour out-of-doors during midwinter. I have already in a previous note mentioned several of those with white stems, and among those of a different colour it may be worth while to draw attention to

this Willow, for although a native of our own country its beauty in winter and spring, when given special cultivation, is either not known or is not sufficiently made use of. It belongs to Borreri's section *Alba* of the genus *Salix*, and is, indeed, so nearly allied to *S. alba* that some authorities make it a variety of that species. At Kew it is represented by two forms, one with yellow, the other with red bark. Both are grown on the island of the Lake together in mixed groups, and from now onwards till spring they give one of the brightest of outdoor effects. During sunshine especially they attract the eye, for, growing on the edge of the water, their beauty is doubled by reflection. In order to show this Willow at its best, it is necessary that it should be cut hard back each spring. If let alone it will eventually grow into a tree 30 feet or more high, but it is not short twiggy shoots that are wanted, for as a garden plant its full beauty can only be brought out by making it produce each year a crowd of long thick wands. This is done by giving it a moist place, a fairly rich soil, and by pruning back the previous season's shoots to a few buds every February or March. *W. J. B.*

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

I DO not ever recollect so fine a display of bloom in the open air in November as we are enjoying at the present time. The air in this part of the country has been dry and warm, with much of bright sunshine, which accounts for the wealth of bloom to be seen here, and in almost every cottager's garden as well. Plants grown in pots for furnishing large blooms require great attention, but where large quantities of cut-flowers are looked for, a large number of *Chrysanthemums* should be planted on a well-prepared piece of ground, and made very firm. If planted out at the end of April or early in May, with very little after care, these plants will lift well after the buds are set. We have had a very fine lot, and it is needless to remark have found them very useful for cutting from. Several of these were cut down to within 3 to 6 inches of the ground-level in the middle of the month of June, others stopped once at the end of the month of May; all of which have done well, although the flowers are not so large as those grown on plants in pots. The flowers are more useful when removed with long stems. I have found the following varieties good to plant out: Stanstead White (one of the best), Major Bonaffon, Lady E. Saunders, Elaine, Mrs. G. Rundle, Mrs. Dixon, William Seward, and Mrs. G. Gleany. Before lifting the plants at the end of September, or later if the season is mild, the roots should be thoroughly moistened some hours previously with water; dig up the plants carefully, and have the pots prepared, potting them where they are lifted, and carrying them to some shaded spot, keeping them from flagging by frequent overhead syringings, with plenty of water to the roots, &c. They should be staked just sufficiently to keep the shoots from breaking. *H. Markham, Northdown, Margate.*

SOUVENIR DE LA MALMAISON CARNATION.

From the frequent inquiries observed in the *Gardeners' Chronicle*, it is apparent that there are cultivators of this plant who do not meet with success. The worst foe to the plant is the fungus named *Helminthosporium echinulatum*, whose presence in the leaves is not suspected till spots occur on the outside, when it is always too late to use remedies. The cultivator is in no wise to blame for this state of things—that is to say, cultivators of experience and intelligence; for it is the experience of many that they have cultivated these plants to perfection in one locality, and failed utterly in another. And provided the plants are not over-fed, or kept too warm or close, there is little for which the cultivator can reasonably be blamed. If enquiry were made of those who still grow the plants successfully, it would be found quite a simple method

differing culturally but little from that given in other gardens where failures are the order of the day. Good fibrous loam three-fourths, and equally good fibrous peat one-fourth, should form the chief part of the compost in which the varieties of this *Dianthus* are to grow. Plenty of sharp sand, some burnt clay, a shovelful of bone-meal, and twice as much charcoal of horse-bean size, should be added to each barrowful of soil; no manure—that is to say, not any of the usually prescribed "Mushroom-bed manure" that appears, perhaps too freely, to find its way into most mixtures of soils. The plant is a gross grower naturally, and the aim should be, so far as this

situated in low-lying districts, or are near a large river or other considerable body of water. Along the Thames valley I could give the names of a dozen growers in a large way who, after a year or two of trying and failing, threw their stock of plants to the rubbish-fire. These men were not cultivating a few plants, but some of them had several thousands, and the leading varieties, which half-a-dozen years ago fetched good prices. Some of my neighbours, who formerly had house after house 100 feet long by 21 feet wide filled with these plants, were compelled to clear out the entire stock. In my own case, some 3000 plants went the same way, after all the trouble

within the cuticle of the leaf from vegetating at the proper time, but so far as I can at present determine, it arrests and destroys its vitality. One rather badly affected plant on which I experimented, using the sulphur with a small camel-hair pencil, and collecting all I possibly could of the spores, I cleansed the pencil in sulphured water. By careful watching, I was able to drop some sulphur on the spot, which prior to bursting is of an ash-grey tint, and in this way the spores were more or less ruined. I note also that the spores on dressed plants are of a different brown tone to those on undressed plants, and I have hope that this is a sign of diminished vitality.

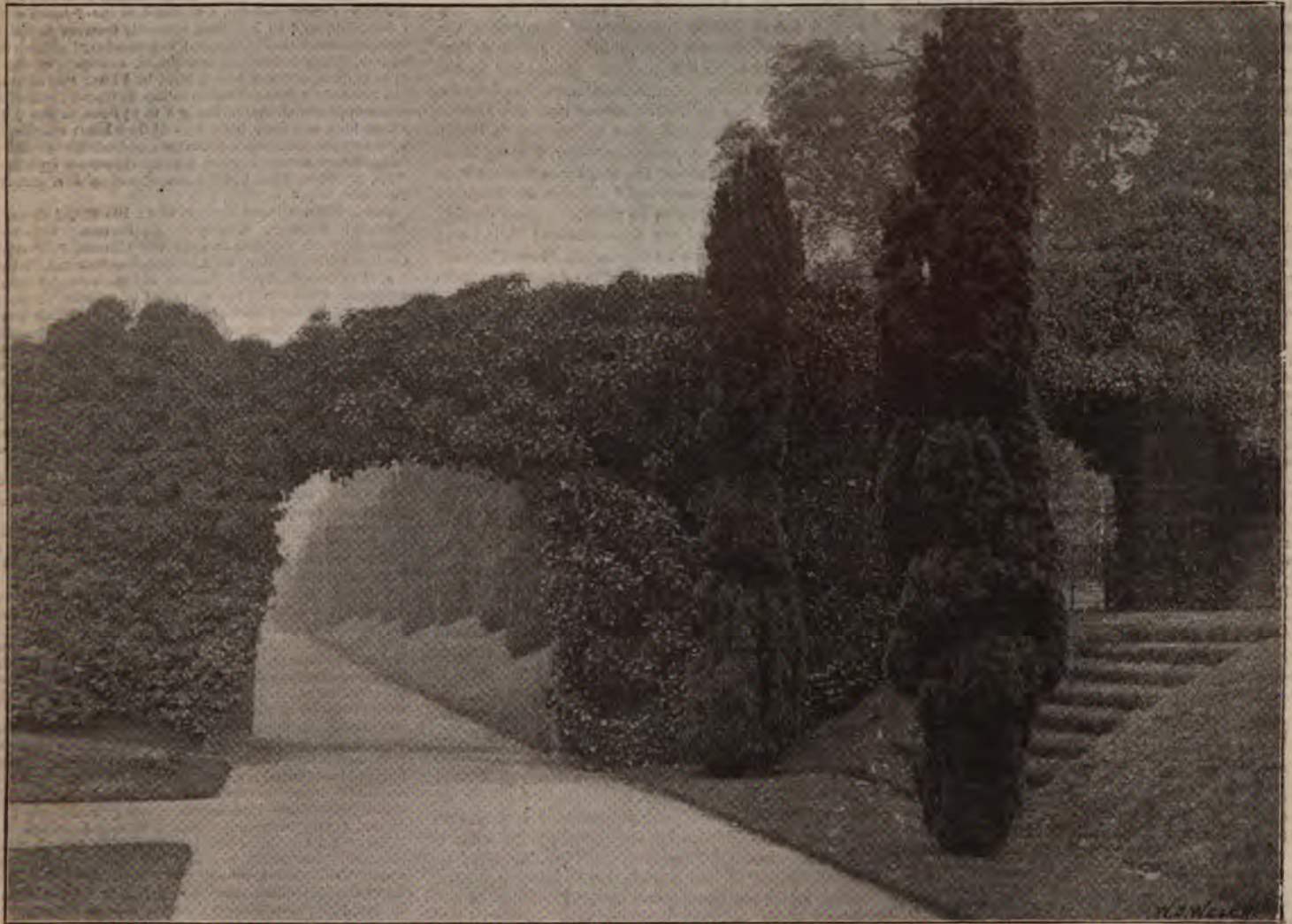


FIG. 115.—VIEW OF IVY ARCH, AND, CURIOUSLY-PRUNED IRISH YEWS, IN SIR C. ISHAM'S GARDEN, LAMPORT HALL.

(The "Eagle" Walk is 340 yards long, and by its borders there are 106 specimens of Irish Yew, all pruned differently. They were described in our issue for Sept. 25, p. 209.)

is likely to be controlled by soils and such like, on the side of imparting solidity to the tissues rather than the reverse, and preserving intact the waxy bloom on the grass, which in itself is a protection against the inroads of fungi and insects. Potting should be done firmly, light loams being rammed, and water should be not abundantly afforded. A cool and well-ventilated house affords a suitable place for them. A perfect drainage is an essential condition of success. In gardens where the plant is grown well, it is an easy matter to make them susceptible to disease by a little careless treatment—as for instance, frequent repotting, and over-large pots. The growers who mostly fail entirely are those whose gardens are

of layering, potting, &c. To attempt any cure by picking off the affected parts not only skeletonises the plants, but is in effect as disastrous as the disease, no root-action going on without leaves.

Nor is it only *Souvenir de la Malmaison* Carnation that is affected by this fungus, it being abundant on *Tree* or *Perpetual* Carnations, *Mdlle. Carle*, *Winter Cheer*, &c. Others, again, of the small-leaved kinds, such as *Miss Joliffe*, the fungus does not affect. Although I have long since dispensed with *Malmaisons*, I have the fungus still, and this year I have been trying to annihilate it by syringing the Carnations with a solution of sulphur mixed with soft-soap. This, of course, does not prevent the fungus already

It is very curious to note the districts where this pest is most felt. Invariably all low-lying places are much the worst. In some districts the affected plants become free, and to some extent at least I believe this is so around Chelsea, owing to the atmosphere being charged with noxious sulphurous from the gas works there.

Usually in hilly districts there is perfect immunity from attacks of the fungus, and the plants with ordinary care are quite a success. Perhaps the most perplexing thing is the inability to grapple with the pest. So far as I know, preventive dressings with the above-named mixture is the only means even of minimising an attack. J.

THE BOTANICAL HISTORY OF THE UVA, PAMPAS GRASS AND THEIR ALLIES.

(Concluded from p. 378.)

CORTADERIA.—The species constituting this genus are closely allied, and their distinction is consequently difficult. This difficulty is, moreover, increased by the circumstance that the spikelets are more or less, though slightly, heteromorphic, according to the sex, and that it is not always possible to ascertain beyond doubt from herbarium specimens whether two specimens representing different sexes actually belong to the same species. Besides, the *Cortaderias* being tall, long-leaved grasses, and rather unwieldy for herbarium specimens, the number of individuals found in the collections is neither great, nor are they always complete, and selected so that they fairly represent the average type of the species. Here the aid of field observation, and of notes made on the spot, is very much desired. I have seen only *Cortaderia argentea* alive (in cultivation). The descriptions of the other species are exclusively based on the specimens in the herbarium at Kew, and in that of the Natural History Museum in London, and on fragments of panicles from the herbarium in Berlin, which Professor Engler and Professor Urban were good enough to communicate to me.

SYNOPSIS OF THE GENUS CORTADERIA.

Cortaderia, Stapf.—Spikelets dioecious, loosely 3- to 7-flowered, rhachilla glabrous, disarticulating above the glumes and between the valves, apex tabescent. Glumes hyaline, very narrow, 1-nerved, sub-equal. Valves sub-hyaline or hyaline, lanceolate or ovate at the base, acuminate, 3-nerved, awnless, mucronate or finely aristulate, glabrous or scantily hairy in the δ , copiously hairy towards the base in the σ , callus slender, hairy. Pales 3 to 6 times shorter than the valves, hyaline, 2-keeled, minutely 2-toothed or obtuse. Lodicules nerved, ciliate. Stamens 3 in the δ , reduced to as many minute staminodes in the σ . Ovary glabrous, rudimentary in the δ ; styles short, distinct; stigmas slender, plumose, laterally exerted. Grain narrow, oblong, embraced by its valve and pale, free, sub-terete, or slightly compressed from the back; hilum linear, equalling about one-half of the grain; embryo shorter than the hilum. Perennial grasses, forming large tussocks; rhizome very short; shoots intravaginal; culms biennial, simple. Leaves mainly crowded at the base, sheaths increasing in length from the base to the top, imbricate; ligules reduced to a dense line of silky hairs; blades very narrow, caudate-attenuated, very long and flexible. Panicle ample, dense, or rather loose, shining or plumose.

Species 5:—South America, almost confined to the extra-tropical region, and the Andes as far as Ecuador.

Glumes 6 to 8½ lines long, very narrow, linear, produced into a very long and fine acuminate; valves 6 to 8 lines long, lanceolate, long acuminate.

Panicle subsecund, 1 to 2 feet by 4 to 6 inches (lowest branches to 9 inches), rather distinct in the δ and σ ; valves of δ glabrous, or almost so; middle nerve scarcely excurrent; hairs 3 to 4 lines long. 1. *argentea*

Panicle symmetrically oblong, ½ to 1½ foot by 2 to 2½ inches (lowest branches to 5 inches), almost alike in the δ and σ ; valves of δ hairy, middle nerve excurrent into a bristle 3 to 5 lines long; hairs 2 lines long. 2. *aracana*

Glumes 4 to 5 lines long, narrowly lanceolate to linear-lanceolate, acuminate, tips usually minutely truncate or two-toothed; valves 4 to 6 lines, lanceolate or ovate-lanceolate, acuminate.

Panicle very dense; glumes 4 to 4½ lines long; valves 4 to 5 lines long.

Panicle rather stiff, 1 to 1½ foot long by 2 to 2½ inches, symmetrically oblong, very softly silky, shining; valve-tips very fine, often shortly aristulate; staminodes with slender filaments ½ to 1 line long. 3. *speciosa*

Panicle more or less nodding or secund, often lobed, 1½ to 1½ foot by 4 to 5 inches, coarsely silky, scarcely shining; valves caudate-acuminate, tips rather rigid, curved, staminodes ½ line long. 4. *rudiuscula*

Panicle rather lax, 1 to 2 feet by 3 to 6 inches, lowest branches to 1½ foot long; branchlets very slender; glumes and valves very delicate, 5 to 5½ lines and 6 lines long respectively; filaments of staminodes very slender, often with clavate tips, to ½ line long. 5. *Quila*

1. *Cortaderia argentea*, Stapf, "the Pampas-grass of gardens."—Flowering culms, 6 to 8 feet high (excl. panicle), elongated internodes (i.e., those which are longer than 1 inch), about ten to twelve, the uppermost (peduncle) 2' to 2½ feet long, the preceding 4 or 5 to 10 inches long. Upper sheaths to 2 feet long; blades 6 feet by 3 to 5 lines. Panicles broadly-oblong, 1 to 2 feet by 4 to 6 inches, the lowest branches to 9 inches long, often with a purple, rarely with a greenish-brown tinge; those of the δ laxer, with the branches more

nodding, and more or less secund, silvery; of the σ silky, feathery. Spikelets 3 to 6-flowered 5 lines long; glumes very narrow, linear, produced into a very long and fine acuminate, the lower about 6 lines by ½ line, the upper 6 to 8 lines by ½ line; valves lanceolate, long acuminate, 6 to 8 lines long, of the δ glabrous, or very scantily hairy; of the σ densely hairy; hairs 3 to 4 lines, middle nerve scarcely excurrent. Stamens very minute, cylindric or linear, ½ to ½ line long, with hardly any trace of an anther; grain 1 line. *Arundo dioca*, Spreng., *Syst.*, i. 36 (non Lour.); A. Selloana, Schult., *Mont.*, 605. *Gynierium argenteum*, Nees, *Agrost. Bras.*, 462; G. diocum, Dallière, *Pl. Ornam.*, i. t. 42; G. purpureum, Carr., in *Rev. Hort.*, xxxvii, 419.

Distrib.—Brazil, Rio Grande do Sul, without locality, δ Fox; very common in the Campos of Alegrete, σ Glaziou, 11,635. Paraguay, Rio Pilcomayo, σ , Morong, 950. Uruguay, without locality, δ , Gilbert, "plentiful in all parts of Banda oriental; σ , Tweedie; Montevideo, δ , Sellow. Argentine, "Marshes of La Plata," σ , Tweedie; Buenos Ayres, δ , Tweedie; southern parts of the State, to the south of Laguna Quentre, and Fuerte Lavalle, σ , Lorentz. Bahia Blanca, σ , Claraz, 23; σ , Tweedie.

I have confined myself to the enumeration of those specimens which I have actually examined. According to this list of localities, the area of *C. argentea*, the Pampas-grass, extends from Southern Brazil to Northern Patagonia, and it nowhere crosses the Andes. Doell records it also from Minas Geraes, Rio Janeiro, and S. Paul; but as Peckolt states that the grass is grown as an ornamental plant in gardens in Brazil, the spontaneity of the specimen referred to by Doell is somewhat doubtful—at least, so far as the environs of Rio Janeiro are concerned.* There are frequent references to *C. argentea* in various papers dealing with the vegetation of the Argentine and Chile; and it is indicated for Chile by Gay in his *Flora Chilensis*, and for the western provinces of the Argentine (Catamarca and Salta) by Grisebach, in his *Symbola Florae Argentinae*. These statements may, however, partly be proved to be erroneous, on the evidence of the specimens quoted; whilst in other cases, where there is no material for examination forthcoming, they must be taken at present as yet unverified, and as being in contradiction to what we actually know; and it is most likely that in those cases a confusion of *C. argentea* with *C. rudiuscula* and perhaps with *C. speciosa* has taken place.

A few words concerning the popular name of *C. argentea*, namely, "Pampas-grass," may be in place. The name appears, I believe, for the first time in Paxton's *Flower Garden*, i. (1850—51), p. 175, where the plant is first mentioned also as a new introduction into horticulture, the merit for which is due to Mr. Moore, of Glasnevin, Dublin. [A figure and a description from D. Dalkeith appeared in our issue for November 29, 1851.] There is, however, no reason given for this name, or the origin of the name, but a few years later we read in the *Gardeners' Chronicle*, 1854, p. 708, "We are unable to say with certainty where the species grows wild. The Prussian botanist, Sello, is reported by Nees v. Esenbeck to have found it at Monte Video, and we know that vast tracts (pampas) near that city, and in all the adjoining countries, are covered with what is familiarly called "Pampas Grass," but we have no certainty that the name is applied to one large grass only, and that our *Gynierium* is that one." Now, however, common *C. argentea* may be in certain localities, all the evidence tends to show that it is confined to the neighbourhood of watercourses, and to depressions where there is a constant and sufficient supply of underground-water, and that it is absent from the greatest part of those vast grassy plains which we generally call "Pampas." The grasses which form so prominent a part of the pampas vegetation, belong rather to very different genera. Niederlein, a good authority on the Argentine vegetation, says, indeed, that the occurrence of *C. argentea* in the pampas, is by no means so general as to justify

* After the manuscript had gone to press, I received, through the kindness of M. Crépin and M. Durand, a branch of the specimen quoted by Doell as having been collected near Caldas, in the state of Minas Geraes. It was taken from a δ panicle of *C. argentea*. Caldas is situated in the extreme south-west of Minas Geraes, within the basin of the Paraná, and in the dry region of the campos. Thus, it seems that *C. argentea* extends along the Paraná and its tributaries into the southern parts of tropical Brazil. On the other hand, I have received, through Professor Urban, a communication from M. Glaziou, according to which this species occurs in Rio Janeiro only in the cultivated state.

the name "Pampas-grass," and the less so as the *Cortaderia* is much more common in the Andes, ascending there to high altitudes.

2. *C. aracana*, Stapf.—Culms rather slender and short, elongated internodes few, the uppermost over 1 foot long. Blades to 4 feet by 3 lines. Panicles oblong, erect, very dense, ½ to 1½ foot by 2 to 2½ lines, the lowest branches to 5 inches long; straw to light bronze coloured, lustrous, those of the σ more silky, otherwise like the δ . Spikelets four- to seven-flowered, to 10 lines (exclusive awns), glumes very narrow, linear, produced into a very fine and long acuminate, the lower 7 to 8 lines by ½ line, the upper 8 to 8½ lines by ½ line; valves lanceolate, long acuminate, 7 to 8 lines, hairy in both sexes, but more in the σ , hairs 2 lines, middle-nerve excurrent into a bristle 3 to 5 lines long, staminodes with short thick filaments, about ½ line long, and minute rudimentary anthers.

Distr., Chile, Valdivia, σ Lechler, 613; σ Philippi; Chiloe, δ , King.

A very fine species with rather narrow, dense, and exquisitely lustrous panicles.

3. *C. speciosa*, Stapf.—Flowering culms rather stout, uppermost internode over 1½ foot long. Blades over 1½ foot by 3½ lines. Panicles oblong, very dense, or the δ laxer, strict, 1 to 1½ foot by 2 to 2½ inches, elegantly lustrous and silky. Spikelets three- to four-flowered, to 5 lines long; glumes very narrow, linear-lanceolate, acuminate, subequal, of the δ 4½ to 5½ lines, of the σ 4 to 4½ lines, by ½ line; tips minutely two-toothed; valves lanceolate in the σ , from an ovate base setaceous acuminate, in the δ 5 to 6½ lines, in the σ 4 to 5 lines long, and silky, hairs 2 to 2½ lines long; staminodes, with very fine filaments to ½ line long, and minute but distinct rudimentary anthers; grain ½ line. *Gynierium speciosum*, Nees, in *Meyen, Reise*, i., 407 (nomen), and in *Nor. Act. Nat. Cur.*, xix., Suppl. i. (1843), 153.

Distr., Chile, without locality, Gay; Bio Bio, Antuco, δ , Poeppig; Santiago, Rancagua, σ , Bertero. Valparaíso, Cuming, σ , 386; seaside swamps near Concepcion, σ , Poeppig; Copiapó River, σ , Meyen. Atacama, Borchers and Philippi.

4. *C. rudiuscula*, Stapf.—Smaller and more slender than *C. argentea*. Culms with few elongated internodes, the uppermost to 2 feet long; blades to 4 feet long, and to 6 lines broad; panicles oblong, more or less nodding, very dense, often slightly lobed, 1½ to 1½ foot by 4 to 5 inches, the lowest branches to 9 inches long, those of the δ somewhat laxer, scarcely shining, of the σ rather coarsely silky. Spikelets three- to five-flowered, 5 to 7 lines long; glumes very narrow, lanceolate, sub-equal, 4 to 4½ lines long by ½ to ½ line; tips nearly always minutely 2-toothed, valves lanceolate from an ovate base, rigidly caudate-acuminate, about 4 lines long, minutely mucronate, scantily and shortly hairy in the δ , copiously hairy in the σ , hairs 3 to 4 lines, spreading, rather stiff; staminodes very small, filaments thick, ½ to ½ lines, rudimentary anthers hardly distinct.

Distr.—Argentine, Tucuman, Serra Aconquija, 8300 feet, δ , σ , Lorentz and Hieronymus, 732; Salta, Nevado del Castillo, σ , Lorentz and Hieronymus, 78. Chile, Santiago σ , Philippi; Santa Rosa de los Andes σ , Hall.

Philippi's *Gynierium atacameum*, which I know only from the description, is perhaps referable to *C. rudiuscula*, and I suppose that this is also the case with the "*Gynierium argenteum*" of F. Kuntz, of which this author says that it is common along the watercourses of the Cordilleras of Mendoza, covering near the Rio Salado vast tracts of moorland, the so-called "Cortaderales," and ascending to high altitudes, where it is very much dwarfed.

5. *C. Quila*, Stapf.—Culms stout, uppermost internodes more than 1 foot long. Blades to 4 lines broad (I have not seen any intact blades from the lower leaves). Panicles large, oblong, rather lax, erect or slightly nodding, 1 to 2 feet long, the lower branches to 1½ foot long, very slender, erect, or flexuous and nodding, loosely ramulous, those of the δ very lustrous, of the σ silky. Spikelets 3 to 5-flowered, 5 to 7 lines long; glumes very narrow, linear-lanceolate, acuminate, acute or minutely 2-toothed, sub-equal, 5 to 5½ lines, by scarcely ½ line, nerve evanescent below the tip; valves lanceolate, long and finely acuminate in the δ , broader below in the σ , 6 lines long, glabrous or very scantily hairy in the δ , copiously hairy in the σ ; hairs 2 to 2½ lines, staminodes ½ line long, filaments very fine or clavate at the tips; rudimentary anthers very minute or hardly any. *C. Quila*, Nees, in *Nor. Act. Nat. Cur.*, xix., Suppl. i., 153. *Gynierium jubatum*, Lemoine ex Carr. in *Rev. Hort.*, xlix., 419. *G. roseum* Rendatleri, *The Garden*, viii., 165 (name only). [*Gynierium argenteum* carminatum Rendatleri, *Flora des Serres*, t. 2075; ex *Gard. Chron.*, Oct. 2, 1874, p. 419.]

Distr.—Bolivia, Condurpati, Cochipata, &c., near Sorata, in wet places amongst cliffs, 9000 to 12,500 feet, σ , Mandon, 1322; common in damp gullies on banks of streams about La Paz, σ , Pearce, σ , Rang, 26. Peru, Cuzco, 11,880 feet, σ , Pentland; Arequipa, σ , Meyen; near Lake Titicaca, σ , Meyen. Ecuador, Chimborazo, σ , δ , Roelz; Andes of Quito, in ravines, 10,000 feet, σ , Hall.

This species is common (according to M. André, in *Rev. Hort.*, 1886, 520) between 9000 and 11,000 feet on Imbabura, Guallabamba, Cotopaxi, Corazon, and Chimborazo.

The male spikelets are described from a cultivated plant, said to have been raised from seeds sent by Mr. Roelz. The glumes and valves are extremely delicate in this specimen, and suffused with the most delicate purple hue. This tinge is mainly due to the colouring of the nerves, and sometimes also of the callus. It occurs also in most of the female specimens, where the ripening grain is often deep purple. Specimens named *Gynierium roseum* Rendatleri in the Kew Herbarium are identical with Roelz's male examples of *C. Quila* σ Stapf, Kew.

PLANTS ON WALLS.

walls when left undisturbed often afford examples of the artistic effects produced by nature. Nothing is more beautiful than old walls covered with flowers growing from the

already spoken of the wall flower-beds of M. Edmond Boissier of Valleyres (Vaud), and of the number of species which he thus cultivates. The very rare *Saxifraga florulenta* has bloomed there for more than a quarter of a century, and the rarest *Campanulas* and *Androsaces* are quite at home.

why certain delicate Ferns, *Asplenium Seelosii* for instance, only grow in crevices of the rocks, and always perish in other situations. This is also why *Phyteuma comosum*, *Silene Elisabethae*, *Campanula Raineri*, *Eritrichium nanum*, *Androsace Charentieri*, *pubescens*, *glacialis*, *argentea*, *cylindrica*, *pyrenaica*, *helvetica*, and many other of these delicate plants which require sun, but which invariably die in our temperature, that is why I say again these plants succeed only under those conditions. They require no soil, not even sand, nothing but a little moss to hold them into the chink in the wall and keep them cool. This method of cultivation cannot be too strongly recommended for England for all plants which are considered difficult to grow in a damp climate. In the wall they have constant moisture tempered by the heat of the sun, and which cannot even soak the plants because they are in a horizontal position, and they cannot stagnate. Further, the absence of humus deleterious to xerophytic plants is certainly a great advantage. The plants find sufficient nourishment in the fissures of the wall in the water they absorb, and the air that they breathe. H. Correvon.

ASPHODELINE IMPERIALIS,

SIEHE, SP. N.

This is a splendid example of *Asphodeline*, taken at Thyana, Cappadocia. The flowers are large, of a reddish-white colour, the fruits of angular shape. The stem is furnished with leaf-scales, which are wanting in *A. Balansea*, *A. istmocarpa*, and *A. Dammeriana*. The magnificent rosette of leaves is somewhat prolonged up the stem, and not all of them springing from one base. The plant reaches a height of 8 feet, and is the largest of all the *Asphodelines*. The stem appears to be about to branch (ramify). As our illustration (fig. 116) shows, *Asphodeline imperialis* is an effective, strong-growing, herbaceous perennial. U. D., Berlin.

THE PROPAGATION OF ORCHIDS.

MANY consider it useless to attempt the propagation of Orchids in India, as they do not appear to be at all successful in growing them. The following notes will show that many Orchids can be successfully treated in this manner, even without the aid of a glass-house, but that great care must be taken of the plants.

Dendrobiums are easily increased by dividing the clumps, or, in some cases, cutting off the young growths that appear on the stems. When the clumps are divided, it should be seen that each piece thus treated has roots attached, and care must be taken that the roots are not injured when the knife is applied to the clump. When the clumps have been divided, the pieces should be placed in a cool shady situation, and very little water given until the roots appear to be increasing in length and strength. If it is desirable to propagate from the young growths on the stems, a little moss should be worked in among the roots of the growth, and more added, until the new growth has a good show of these roots; it may then be severed from the parent stem and potted.

The following Orchids may also be divided, and some can be increased considerably in this manner, viz., *Acanthophippium*, *Acineta*, *Acropera*, *Ada*, *Aeranthis*, *Anectochilus*, *Ansellia*, *Arundina*, *Bletia*, *Brassavola*, *Broughtonia*, *Calanthe*, *Catasetum*, *Cattleya*, *Cirrhopetalum*, *Coslogyne*, *Coryanthes*, *Cymbidium*, *Cypripedium*, *Epidendrum*, *Eulophia*, *Gongora*, *Goodyera*, *Habenaria*, *Laelia*, *Lycaste*, *Odontoglossum*, *Oncidium*, *Phaius*, *Stanhopea*, *Erides*, *Angraecum*, *Vanda*, *Saccolabium*, *Renanthera*, and *Phalaenopsis*, may be propagated by cutting off the top just below the first couple of roots, or by taking off the young growths from the base of the stock. *Phalaenopsis* often throw out young growths on the old flowering-stems.

Thunia stems can be cut up and laid on moss, occasionally watered, and young growths will appear in a short time.

and sides; these plants of rocks and walls often very lovely *Centranthus*, *Corydalis*, *Antirrhinums*, *Cheiranthus*, *Campanulas*, and so on. But besides its artistic side, rock has the advantage of protecting the most delicate plants, and enabling those species to develop which it is most difficult to succeed. I have

I allude here to a sustaining wall which supports a terrace, and which consequently is generally cool. But the stone itself is always cool, and in all cases the rock exercises a marvellous hygroscopic influence on the plants. It is a regulator, a controller, which absorbs moisture when abundant, and transmits it to the roots in proportion to their need of it. That is



FIG. 116.—ASPHODELINE IMPERIALIS: FLOWERS REDDISH-WHITE.

Arundina bambusæfolia stems, if cut into lengths of six inches and inserted in sand and leaf-mould, often commence growing nice little plants.

THE PRODUCTION OF BACK GROWTH.

In this manner some Orchids, that go on growing year after year and only produce one flowering stem, may be treated. Williams gives the following directions for this operation: "Take a plant that has back pseudo-bulbs, some four or five it may be, and cut the rhizome in two between the bulbs, not otherwise disturbing it, but allowing the bulbs to remain in the same place. The best time to cut these Orchids is during their season of rest, or just as they are beginning to grow. Any other Orchids that have pseudo-bulbs may be treated thus, but it must be remembered that no Orchid should be cut except when in vigorous health, and not then except to produce back growth. The resting season is the best for this operation, as when in vigorous growth they often produce two growths from the same pseudo-bulb, and continue doing so year after year, increasing rapidly in size, and forming excellent specimens. When this is the case, if it is required to increase the stock of a particular plant, take off a piece just as it is starting into growth; the plant taken off can be potted at once, and placed in shade, until it shows signs of growth, when bring it to the light. Often such growths are sold as original plants, even when in flower, and great care is necessary in looking after them." *"Canna," Indian Gardening.*

FORESTRY.

DEGREES OF THINNING.

ALTHOUGH thinning is an operation, concerning which no two individuals appear to entertain the same ideas, it is difficult to see why so much divergence of opinion exists on what after all is a very simple piece of business when once its principles are understood. In this country, the term "thinning" is applied to almost any operation which reduces the number of trees in a plantation without actually leaving the ground bare. The presence of a few dead branches is generally considered indicative of an unnatural condition of affairs which requires an increase of air and light to put it right; the idea being, of course, that each tree should have ample space for the development of its branches, and the rapid thickening of the bole resulting therefrom. It is unnecessary to state the various objections advanced against this arboricultural system of thinning, as a slight acquaintance with the literature of modern forestry render them familiar to anyone. But it is evident from the occasional expressions of opinion which appear in the *Gardeners' Chronicle* and elsewhere, that a great deal of misunderstanding exists over the definition of the term itself, as represented by its three degrees of light, moderate, and free thinning. The old-fashioned forester, who has usually been taught his business in a north country district, where Larch and Scots Fir form the chief bulk of the plantations, invariably sticks to the rule of keeping a space between his trees equal to one-third of their height, or as near that distance as possible. He religiously applies this rule to any and every species he may have to deal with, and does not hesitate to place any plantation not so thinned amongst the numerous instances of bad management, which result from the lack of a north country training. There are others again who go to the opposite extreme, and contend that any form of thinning is not only unnecessary, but positively detrimental to the production of good timber, and point, in support of their arguments, to the high quality of timber grown in natural forests which have never been thinned by artificial measures. Both of these opposing arguments have their weak points, although better results usually follow the adoption of the "no thinning" system than that of the free thinning principle of the old school. Let us endeavour to sum up the points for and against these two systems severally.

The chief objects in view in the management of most British plantations are, we may assume, profit and ornament. How does the freely-thinned plantation fulfil these objects? As regards profit, the advocates of this system usually contend that the trees in their plantations arrive at a given or marketable size quicker than the trees of an unthinned

wood. This is undoubtedly the case, and if quality be no consideration, then the freely-thinned wood will probably prove the more profitable of the two. But can quality be ignored in the produce of a plantation which is intended to show a profit? By quality, we mean the most prominent features of straightness of grain, and freedom from defects and coarse knots, and the greatest possible proportion of stem or bole to branches. As is well known, the chances of securing timber of high quality diminish as the distance between the trees at an early age increases, and this fact at once condemns free thinning. But to decide whether quality may be ignored or not we must see what the chief uses of British-grown timber are. Practically speaking, all timber is either used on the estate on which it is grown, or it finds its way into the timber-yards of provincial timber merchants. In the former case, its chief use is found in the erection of fencing, out-buildings of farms and cottages, manufacture of gates, estate implements, &c., according to the species of tree, and its adaptation for those purposes. For fencing, Larch and Oak are chiefly used, and the quality of the wood of the former depends more upon the soil on which it is grown than upon its sylvicultural treatment. In an ordinary plantation, healthy trees will always produce sufficiently good timber for fencing purposes, or for rougher kinds of estate work, even when thinned freely at all stages, owing to the tendency it has of losing its lower branches without great crowding. This tree therefore often gives best results when freely thinned. *A. C. Forbes.*

(To be continued.)

UNITED STATES.

THE APPLE CROP OF 1897.

It is but natural, says the *American Agriculturist*, that after the very pronounced over-production of old-established commercial Apple-orchards last year, and consequent weakened condition of trees, there should follow a reaction and rest-period, such as the season of 1897 now shows. The contrast in the distribution of the crop of winter fruit, so far as surplus Apples are concerned, is most marked. The districts which last year produced the heaviest, swelling the crop to the greatest on record, now show a most pronounced shortage; while other and new sections, coming into increasing prominence every year, have turned off a product liberal in the aggregate, though deficient compared with a full year. The commercial Apple crop of the United States is about two-thirds of an average, taking a series of years, and rather less than half the enormous record-breaking yield of 1896, with the quality likewise greatly deficient, taking the country as a whole.

The total crop of Apples of 1897 for the United States is estimated at 37,436,000 bushels, against nearly 70,000,000 bushels representing the crop of 1896. The crop of 1895 approximated 61,000,000 bushels, 1894 about 58,000,000; and in 1889, the United States census year, 57,000,000 bushels.

The distribution of the crop of winter Apples available for the American markets and for export is this year little less than unique. Not in years has there been such a uniformity of shortage and indifference in quality in the long recognised commercial Apple-belt of the middle and eastern States. Occasional counties here and there show brilliant exceptions in the way of really good crops and of fine quality.

In the central, west, and south-western States, an excellent promise early in the year gave way in August and September, through extensive and excessive heat and drought, to serious loss, but still leaving a quantity of Apples for market liberal in the aggregate. An important part of this western crop, however, is rather poor to common in quality. Summer and autumn fruit in the southern States has long since passed out of sight, although quite recently Virginia has been marketing some choice table varieties at high prices in the northern cities. Thus the Apple crop is greatly deficient in the east, irregular in the middle west, fair to good in the west.

As long ago as early last spring it was a generally accepted fact that nothing like the 1896 crop of Apples could be expected, this being the "off year," as orchards here so heavily twelve months ago. In the northern and eastern Apple-belt, orchards failed to bloom freely, yet many counties had a good show of blossoms, and a fair set of fruit. Unusual weather, however, with excessive rainfall, proved injurious, making the condition suitable for the rapid development of insect-pests, which were particularly

prevalent nearly everywhere. Owing to the big crop a year ago, and possibly in part to low prices, very many orchards were neglected, spraying was insufficient or improperly done, and insects held fall sway. Such fruit as remained on the trees through the summer was in a very great number of instances imperfectly formed, gnarled and wormy, particularly in the older part of the commercial Apple-belt. Late summer and autumn weather conditions were fairly favourable for the final development of the fruit, with the exception of the central and south-western States, where excessive heat caused Apples to ripen prematurely or shrivelled on the trees, enormous quantities dropping to the ground scarcely suitable for cider purposes. The quality of New England's short crop is poor, as a whole; in the older central and middle States only fair to decidedly poor; in the west not high, other States are showing satisfactory quality. A good many young orchards are coming into bearing in the south-west. Owing to damage wrought by the recent drought, large quantities of this fruit have been sent to evaporators, thus disappearing from available supplies. *J. J. Willis.*

(To be continued.)

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Propagating Gooseberries and Currants.—The present is a good time to put in cuttings of Gooseberries and Currants, selecting for this purpose strong shoots, taking them off close to the branch. The cuttings should measure 1 foot in length, the lower part of a shoot being chosen, and all the buds on the lower half should be removed clean with a knife, so as to ensure a stem without suckers. The cutting-bed should have been recently manured, and the cuttings may be placed upright, at 6 inches apart, in trenches cut out as the ground is being dug, at 1 foot apart treading, the soil firmly on either side of the rows. Let each variety be securely labelled with its name, the labels being stout ones, capable of lasting two or three years.

Transplanting Last Year's Cuttings.—Plants raised from cuttings last year may be transplanted at any open time during the winter into preparatory or nurse beds at 15 inches apart, first affording the ground a dressing of short manure, and planting in the same manure as cuttings, so as to avoid trampling the land. Each plant should have its main roots shortened a little, and have the soil made firm about the roots. A mulch may be applied forthwith as a protection against frost.

Plantations of Raspberries.—New plantations may still be made of strong canes, putting them in rows from 4 to 5 feet apart, on well-manured, trenched ground, allowing a space of from 6 to 12 inches between the canes if they are strong. The varieties Superlative, Hornet, and Carter's Prolific are everything that can be desired for summer-bearing, being robust of growth, of great cropping capabilities, and the fruits of large size, solid, and of good flavour. I need hardly state that the weight, size, and quality of a crop, like that of any other kind of fruit, are nearly always proportionate to the depth, texture, richness, and retentive character of the soil. If a plantation is well managed, the crops obtained in the generality of years are very remunerative.

PLANTS UNDER GLASS.

By G. H. MAYCOCK, Gardener, Laton Hall Park, Luton.

The Greenhouse, or Show-house.—The plants in this building should be re-arranged as regards the flowering subjects once a fortnight, turning plants round that are likely to spoil by becoming drawn to one side more than another, washing conserves from the pots, and stirring slightly the surface of the soil of pots, tubs, and borders, and clearing away everything that savours of decay, or is likely unduly to harbour damp. Afford water to those plants that need any early in the morning, mopping up what is spilled on the floor staging, &c. Great care must be taken that none of the plants is water-logged, this being a serious matter at this season. No plant should be placed in this house unless it is quite clean and free from injurious insects, and moreover is properly trained when that is necessary.

Ericas and Epacris.—Some of these will now be coming into bloom, and in order to keep them presentable for as long a period of time as possible,

the bulk of them should be placed at the cooler part of the house, and a close watch kept for mildew on the Erics, applying flowers-of-sulphur on its appearance. *Daphne indica*, greenhouse *Rhododendrons*, *Boronia*, *Phenocomas*, and other hard wooded plants, and *Epiphyllum truncatum*, should be raised above the general level or placed on shelves, so that air may reach every part, otherwise for lack of air and light the lower shoots of some of them may die, and the beauty of the plants be destroyed. Let the decaying leaves be removed from roof-creepers, and from *Camellias* secured to pillars and walls; and on days when the men cannot be employed out of doors, endeavour to get the leaves of *Camellias*, *Indiarubber*, *Orange-trees*, *Palms*, *Aspidistras*, &c., freed from dust, black-fungus, scale, &c., in some cases by dry rubbing, and in others by the use of soap and water, or an insecticide of some kind, or simply by using clean water and the syringe. The temperature may now range in the intermediate-house from 50° at night, and 55° to 60° by day, and in the cool-house from 42° to 45° at night, and 50° to 55° by day.

Creeping and Climbing Plants.—The time has arrived when plants of *Allamanda* of species, *Stephanotis floribunda*, &c., may receive their annual pruning. In the case of the latter, a partial thinning-out of the weaker shoots will suffice, the shorter laterals and spurs being left to produce flowers, these being tied-in loosely, or left untouched, as may appear best suited to the position the plants occupy. *Clerodendron Balfourianum* and *Dipladenias* should be treated similarly. *Allamandas*, *Bougainvilleas*, and *Codiaeums* (*Crotons*) should be pruned hard, assuming that the soil at the roots is dry, and they have been prepared as was advised previously. In the case of the *Ixoras*, these should have the weakest shoots cut back, leaving the others unpruned.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, late of Eastnor Castle, Ledbury.

Early Vinery.—If permanent Vines have to supply the earliest fruit for cutting in the spring, they are probably already subjected to a forcing atmosphere, and will need to be treated as advised in last week's Calendar for pot-Vines. Should, however, the Grapes be not required before the end of May or beginning of June, the early part of December is quite early enough to start the Vines. At the same time, it is good policy to commence early enough in all cases, so as to render unnecessary any hard forcing later on; and especially is this desirable in the case of late Grapes. Lack of colour in such Grapes as *Gros Colmar* is more often due to the Vine having insufficient time to perfect the berries. If the house be kept close, and have a night temperature of 45° to 50°, this is sufficiently high at first; and if fermenting materials are used, very little fire-heat is required during the first few weeks. When the Vines show signs of growth, the temperature may be increased 5° at a time. A good soaking of warm water of a temperature of 85° to 90° is very needful, especially if the borders are shallow. Syringe the rods thoroughly three times each day, till the buds have burst. In succession-houses the work of cleaning and painting should be pushed on as fast as possible. Houses containing late varieties with fruit still hanging will require careful firing and ventilation, and a regular temperature of 50° to 55° at night, with a rise of 5° by day. If good facilities are possessed for bottling and keeping Grapes, I should not hesitate to cut and bottle the bunches without delay. A still, fine day should be chosen for this work, and the greatest care used in handling the bunches, especially *Muscats*. If the Grapes can be bottled, the houses may be thrown open for a longer period than if the Grapes are kept hanging on the Vines till the new year. When these late Vines are pruned, it is essential to secure a good plump eye, even if it should result in having longer spurs than one would wish. In the case of *Muscats*, do not omit to touch the wounds with styptic, as once a Vine commences to bleed in the spring, it is a very difficult matter to stop the bleeding, especially when the Vine is young and vigorous.

Early Peach-house.—If this house was started early in November, the buds will be now swelling fast, and should the weather be mild the temperature may be increased a little. As soon as the flower-buds commence to show colour, syringing must be done much more lightly; and it is a good preventive of green-fly to give the trees at this stage a good fumigating with strong tobacco-paper. By the same means, black-fly (should it be present) may be kept down till the setting period is well past. Give air on all favourable occasions, if only for a short time. Continue pruning and cleaning

operations in all the later houses, keeping the trees as quiet as possible. To this end, tender plants should be excluded from late Peach-houses, as a thorough rest for the trees is imperative if first-class fruit is required.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

Laelia pumila, *L. p. Dayana*, and *L. p. prestans*.—These dwarf-growing Orchids are charming when in flower, and, being now imported freely, they are easily procured. At the present time, the plants generally will be going out of flower, and any which require fresh rooting material may forthwith be attended to, roots from the current season's growth soon entering the fresh potting-materials. Small shallow pans are more suitable than pots or baskets, and these should be three parts filled with drainage, and only a small quantity of peat and moss put in for the plants to root into. After affording fresh compost, suspend the plants near to the roof in the coolest part of the *Cattleya* or Intermediate-house, where, during winter, they may receive the maximum of light. While the plants continue to make roots, the compost should be kept fairly moist, but when at rest very little water is needed, only so much as will prevent the pseudo-bulbs from shrivelling.

Chysis Cheloni, *C. Sedeni*, *C. bracteescens*, *C. Limminghei*, and *C. laevis*.—Those plants whose pseudo-bulbs have attained their full size should now be suspended in a light part of the *Cattleya*-house, and from the present time until the leaves turn yellow and fall off, the quantity of water afforded them should be gradually diminished; and after the leaves have fallen, and the new pseudo-bulbs have been properly matured, scarcely any water will be needed during the period of rest. In order to bloom these plants satisfactorily, they require a long period of decided rest.

Trichopilia fragrans.—This is one of the best, white-flowered, fragrant Orchids now flowering, and it is generally known in gardens as *Pilumna nobilis*. The plant should be kept at the warmest part of the *Odontoglossum*-house, or in any moist house where the winter temperature does not fall below 50°. It requires a light position, but if exposed to bright sunshine, its naturally dark green leaves quickly become of a yellowish hue. Enough water should be afforded as will keep the compost moist when the plant is in bloom; and during the growing period it should be treated in the matter of water like the *Odontoglossums*. Re-potting may be performed at almost any time during the winter months. A well-drained pot is more suitable than a basket, and as a strong healthy plant will produce a great number of roots, the pot should be of considerable size. In potting keep the plant well raised, so that it can easily be watered without danger of water lodging in the young breaks, as these quickly turn black and decay when this happens. *T. laxa*, coming from the same locality as *T. fragrans*, will also do well under the same kind of treatment. *T. suavis*, *T. s. alba*, *T. marginata* (*crispa*), *T. tortile*, *T. Galleotians*, and *T. coccinea* all require a few degrees more heat. The majority of these species have now completed their growth, and care must be taken not to over-water them, or their leaves will become spotted. Those plants that are still growing should be placed in the East Indian house until the pseudo-bulbs are made up. The resting plants are better for being suspended or stood near to the roof of the intermediate house.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Dahlia tubers that have been placed in frames or sheds in order to let the sap dry out of the stems, should be stored in a place that is out of the reach of frost, but not excessively dry.

Helleborus niger.—If this plant is throwing up its flowers, afford it the protection of a hand-glass, or where it is growing in masses that of a frame. Oak branches to which the leaves are still adhering stuck in the ground and bent over them protect the blossoms somewhat, cause the flower-stalks to grow longer, and the blooms to come of a purer white than is the case when glass is used.

General Work.—A good deal of labour must necessarily be devoted to the clearing-up of fallen leaves at this season; the leaves on walks and the outskirts of shrubbery borders, in the garden and pleasure-grounds, and on the lawns being raked up, and carted away without much delay, failure to perform the latter often leading to a repetition of

the work. After this is done, the broom must be employed to complete the job. All Beech, Oak, and Sweet Chestnut leaves should be put into a heap by themselves to be used in hotbeds, &c., and also for rotting for the production of pure leaf-mould. Other leaves will, of course, make mould, but it is not so good for potting purposes, although very suitable as a dressing for flower-beds, shrubbery borders and other rougher uses. After the clearing-up is finished, walks and lawns, and verges should be rolled, rolling being repeated at fortnightly intervals during open weather. If the lawn grows much moss, which is almost always the case if tree-shaded or ill-drained, it should be scratched up with a small fine-toothed rake, and having cleared it away, a top-dressing of fine loamy soil, wood-ashes, soot, and lime should be applied, the last three amounting to one-fifth of the whole, and with which they should be well mixed. Let the dressing be spread thinly, and then brushed in with new brooms. A very wet lawn is never pleasant to walk upon, and the finer kinds of grasses do not succeed on it, and it is generally worth the while to drain it with pipes or rubble drains, this kind of work being carried out in the winter season. If the turf requires to be made level, it may now be taken off, cutting the turves of 3 feet by 1 foot, or of 1 foot square—of the latter size if it be a light sandy soil, and the turf is lacking in toughness. Let the turves be stacked close by the part that is being dealt with. Having removed the turf, prick up the surface, adding fresh soil where found necessary, and rake it level, then trample it firmly, and carefully relay the turf, beating it down firmly. The re-gravelling or turning of dirty walks may be undertaken now, first breaking up the gravel with digging-forks or picks. Although this kind of work is best carried out in the spring months, it may be undertaken at this season in dry weather.

THE KITCHEN GARDEN.

By W. H. POPE, Gardener, Highclere Castle, Newbury.

Asparagus, Dressing for the Winter, Forcing, &c.—If the clearing of *Asparagus*-beds has been neglected to this date, there should be no further delay. After clearing away the decaying tops and all weeds, and drawing some of the soil into the alleys, afford the beds a heavy dressing of rich manure; and then, with the spade and line, chop down the sides of the beds, and spread a little of the soil thus thrown into the alleys over the manure. This will give a tidy look to the beds, and prevent the manure from being disturbed by the birds. The alleys may then be dug. If *Asparagus* is grown in isolated rows on the level, the manure cannot well be covered with earth; but after clearing of the tops, &c., as in the other case, a dressing should be afforded on both sides of the rows for a distance of 2 feet, any rough portions remaining after the winter being raked off in March or April.

Forcing Asparagus.—Another lot of roots may now be got into the forcing-pit, which will probably enable the supply to extend to the New Year. *Asparagus* is readily forced at this season, and when the roots have been well prepared, good produce may be expected. The best roots are those that have been well grown from seed, are four or five years old, and have not been weakened by spring cutting. To do this involves the sowing or planting the required number of roots annually. To keep up a regular supply, fresh roots should be put into heat soon after the heads from the previous batch are fit for consumption. The best and most economical method is to have beds which, by means of hot-water pipes or fermenting materials, can be forced on the ground with shutters, the sides being supported by brick-work and the top of the beds.

Seakale.—Maintain the supply of *Seakale* by the introduction of fresh roots at short intervals, and although forcing is easier now than earlier, it is scarcely possible to have *Seakale* fit for table in less than four weeks. One manner of forcing is to select strong crowns, and dibble them rather thickly into 10 or 12-inch pots, plunging these up to the rim in a gentle hotbed, affording tepid water to settle and moisten the soil. A few pots thus forwarded in heat, weekly, will keep up a regular supply; but the roots must be kept moist, or the produce will be tough, and total darkness is essential for blanching.

Forced Chicory.—*Chicory*-roots may now be placed in warmth for the production of blanched leaves, the same methods being followed as with *Seakale*. After the new year, *Chicory* forces well without bottom-heat in a temperature of 55° to 60°.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, DEC. 7 { National Chrysanthemum Society's Winter Show, in the Royal Aquarium, Westminster (3 days).

SALES.

MONDAY, DEC. 6 { Dutch Bulbs, Roses, &c., at Protheroe & Morris' Rooms.

TUESDAY, DEC. 7 { Continental Plants, Dutch Bulbs, Herbaceous Plants, &c., at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 8 { Japanese Lilies, Continental Plants, Palm Seeds, Roses, Gladioli, &c., at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 8 { Unreserved Clearance Sale of Fruit Trees and Plants in pots, at the Manor House, Southfleet, by order of Mr. W. Chambers, by Protheroe & Morris.

THURSDAY, DEC. 9 { Great Unreserved Clearance Sale of Nursery Stock, at the Barn Elm Nursery, Lower Richmond Road, Putney, by order of Mr. Holmes, by Protheroe & Morris.

FRIDAY, DEC. 10 { Imported and Established Orchids, at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick. —41°.

ACTUAL TEMPERATURES:—

LONDON.—December 1 (6 P.M.): Max., 47°; Min., 39°.

PROVINCES.—December 1 (6 P.M.): Max., 46°, Valencia; Min., 37°, Aberdeen and York.

Wind, colder; snow in the Lothians and in the Midlands.

JAMES BATEMAN.

"ON November 27, at his residence, Spring Bank, Victoria Road, Worthing, JAMES BATEMAN, M.A., F.R.S., aged 87." It is thus that in the fewest words is dismissed, in the columns of the *Times*, one of the most remarkable men in the horticultural world that the century has seen. Early imbued with a taste for plants, he, even when a gentleman-commoner at Magdalen (we doubt if there is such a thing now), showed the bent of his mind. DAUBENY was not even at that time Professor of Botany, or he might have overlooked the venial delinquencies of the undergraduate. At this early date, too, BATEMAN made the acquaintance of LINDLEY, and his tendencies towards Orchid lore and Orchid culture must have been materially strengthened by the intimacy. At this time, as we have heard, BATEMAN was a dandy, and, as such, would not have been looked on with much favour by LINDLEY; but perhaps the love for Orchids was considered a "forte" sufficiently important to compensate for the foible. In later years, BATEMAN took much interest in church matters, espousing warmly the Evangelical cause, and at one time, if we mistake not, serving as editor of the *Rock*.

It is not with such details, however, that we have to concern ourselves; we have to remember him as one of the very first and

most enthusiastic cultivators of Orchids, the creator of two of the most remarkable gardens in the kingdom, one at Knyppersley, the other on a much smaller scale at Worthing. Both these were described in the *Gardeners' Chronicle*, so that we need not refer to them again. The older Fellows of the Royal Horticultural Society will not forget Mr. BATEMAN's pleasant little discourses at the Society's meetings, when he succeeded in giving an amusing and interesting description of the plants exhibited. Mr. BATEMAN has also the credit of having produced the largest book in existence, or at any rate the largest botanical book. This is his *Orchidaceae of Mexico and Guatemala*, superbly illustrated with coloured plates, and with numerous humorous woodcuts by CRUIKSHANK. This splendid volume is in the Lindley library, and is the biggest book in the collection, as we believe it is also in the library at Kew. It is needless to add that this is one of the books which the trustees of the Lindley library would not feel themselves at liberty to lend out!

We do not know that we can do better than repeat what we said in 1871 respecting Mr. BATEMAN's career, and present the portrait of him in his prime on p. 403. Of late years increasing infirmities prevented him from being much among us, but many will remember the occasion when, a year or two ago, he received at a meeting of the Royal Horticultural Society the Veitchian Medal. Surely no one earned that distinction more fully.

Mr. BATEMAN has now for many years been known as an ardent and enthusiastic horticulturist—not so exclusively devoted to Orchids as might be supposed from some of his utterances, though truly they have been to him, so far as plants are concerned, the master passion of his life. They were not, however, his first love, for while still a very young man he took great interest in the cultivation of tropical fruits, and amongst other things succeeded in fruiting, at Knyppersley, for the first time in England, the Carambola, *Averrhoa Carambola*, of which a coloured plate appeared in the "Transactions of the Horticultural Society." Now and then there have been symptoms of a return to his first love, as happened a year or two since, when the Wampee, *Cookia punctata*, was exhibited at one of the meetings of the Royal Horticultural Society; indeed, it rarely happens that a tropical fruit of any kind is shown but that Mr. BATEMAN is stimulated by his old zeal to communicate the knowledge he possesses as to its history and cultivation. The allusion to this circumstance at once leads us to make mention of those pleasant lectures—lecturats, as Prof. HENSLow would have called them—which Mr. BATEMAN has been in the habit of giving at the Royal Horticultural Society from time to time for some years past, and in which he contrives to convey a great deal of valuable and interesting information in a pleasant gossiping style.

Now and then autobiographical details are interspersed in the most natural way with the remarks on plants and how to grow them. Thus many who read these lines must have heard how the exhibition of a coloured plate of *Renanthera coccinea* to Mr. BATEMAN awoke the latent passion for Orchids, and how the first Orchid was purchased—a plant of *Renanthera*—of FAIRBAIRN, a nurseryman at Oxford, who had formerly been in the service of Sir JOSEPH BANKS; and how, still dotting over the glories of the *Renanthera*, Mr. BATEMAN, then a gentleman-commoner of Magdalen College, Oxford, incurred the wrath of the Vice-President of the College—no less a person than Dr. DAUBENY, who subsequently became Professor of Botany in the University. The wrath of the Vice-President was occasioned by the fact that the rules which those in *statu pupillari* are bound to obey had been infringed by Mr. BATEMAN, as the charms of *Renanthera* proved a stronger attraction even than the architectural beauty of Magdalen, and detained the undergraduate beyond the prescribed period. The punishment

awarded for this misdemeanor was not, as might have been expected, the compulsory eulogium in the choicest Greek iambics of the syren *Renanthera*, but took the shape of a command to write out half the *Palms*, wherein, so far as we remember, no special allusion is made to any of the Orchid family.

Botany was at a very low ebb at that time in the University. Dr. DAUBENY, who afterwards did so much for that and other sciences, had not then acquired the position and influence which subsequently he exercised with so much power and discretion to advance the cause of natural science. But although Mr. BATEMAN's botanical proclivities met with little encouragement on the part of his *alma mater*, they were more favourably regarded by others. Encouraged by his father's support and assistance, Mr. BATEMAN despatched a botanical collector, the late Mr. COLLEY, to Demerara and Berbice. An account of this expedition—one of the first of Mr. BATEMAN's contributions to horticultural literature—was published in "London's Gardeners' Magazine." The results, however, of this journey were not remarkable, the Orchids obtained were few in number, and of no special beauty or interest. The novelties obtained were not numerous; to one of them, one of the ugliest as it happens, Dr. LINDLEY affixed the names of *Batemannia Colleyi*, thus associating the names of employer and collector. A short time afterwards Mr. BATEMAN made the acquaintance of the late Mr. G. URE SKINNER, then resident in Guatemala, and the friendship then inaugurated proved of the greatest service to the two persons most concerned, and promoted in no ordinary degree the knowledge of Orchids, and their diffusion among the cultivators of Europe. Thanks to the energy of Mr. SKINNER, numerous Orchids were collected and introduced to our stoves, and abundant material placed at Mr. BATEMAN's disposal for use in his work on the "Orchidaceae of Mexico and Guatemala," atlas folio, 1837—41. This work, in some respects the most remarkable series of plates ever published, demands a few words of notice at our hands, inasmuch as from its costliness and size, and the limited number of impressions struck off, it is not readily accessible to the majority of horticulturists.

It consists of a series of coloured illustrations, of life-size, of a great number of species of Orchids accompanied with descriptive details and cultural hints. It is worth while recording some of Mr. BATEMAN's axioms on this latter point. The plants, says he, can scarcely have too much light or too little sun. Take care of the roots. Beware of noxious insects. Give the plants a rest. Attend to the condition of the air; let it have on the average a temperature of 60° in winter, and of 75° in summer. Do not over-water. These directions were written before the days of cool Orchid culture, to which, however, Mr. BATEMAN subsequently became a convert and zealous proselyte, as witness his lecture on cool Orchids before the Royal Horticultural Society in 1864. But to return to Mr. BATEMAN's *magna biblion*. The illustrations are accompanied not only with suitable descriptions and hints for culture, but with little scraps of gossip, if we may so call them—literary, scientific, archaeological, or ethnological gossip, as the case may be, but in any case noteworthy for its elegant piquancy of style, and for the singularly felicitous choices of classical quotations. The humorous sketches and tail-pieces of GEORGE CRUIKSHANK also lend a zest to this, in many respects, unique publication.

During the progress of this work Mr. BATEMAN married, and by happy good fortune Mrs. BATEMAN shared her husband's love of plants, and zeal in their culture. But while Orchids were the chief subjects of Mr. BATEMAN's regards, hardy plants occupied the first place in the regards of his spouse. Hence arose those gardens at Biddulph Grange and Knyppersley, which have attracted so much attention from their artistic disposition, and the vast number of beautiful and interesting plants which they contained. Were we to tell of all the noteworthy features of the gardens at Biddulph Grange, we should require several numbers of the *Gardeners' Chronicle*. Those who would know of the Chinese garden—a realisation in the garden

of the Willow-pattern plate—the Egyptian Court, the Wellingtonia Avenue, the Grove of Sikkim Rhododendrons, the Bulb Garden, the Dahlia Garden, the Rose Garden, the Pinetum, the Stumpery, the Tree Pæonies, the Orchids, of course, and a host of other things,—we would refer to the lengthened notices given in these columns in 1856, and 1862, by Mr. KEMP and Mr. ANDERSON. Suffice it here to say,

advantage of affording endless variety at all seasons. Moreover, it enabled Mr. BATEMAN, as a true lover of plants, to place each plant, so to speak, in the place and under the conditions most suitable to its requirements. It would not be fair to infer that the art of the landscape gardener was entirely subordinated to the solicitude of the cultivator; rather let us say that the landscape gardener, in this case, did what

as, in addition to his own good taste and feeling for the appropriate, he was aided by [the late] Mr. E. W. COOKE, the eminent painter, and, we may also write, plant-lover.

The partiality for the quaint, we may incidentally mention, shows itself in the "Orchidaceæ of Mexico and Guatemala," where many a "quaint conceit," will be found, both literary and illustrative.



FIG. 117.—PASSIFLORA PRUINOSA, N. SP.: SEALS WHITISH, PETALS FLUSHED WITH BLUE; THREADS DEEP BLUE.

Section of the flower to the left—s, sepal; p, petal; n, outer rays of corona. (See p. 393.)

in general terms, that by skilful arrangement of artificial hill and dale, a wonderful diversity of surface was obtained, and a number of distinct sections parcelled out, each devoted to a particular purpose, as may be gathered from what has been readily said. If this multiplication of parts interred with the breadth and repose one looks for in garden of such pretensions, it had the compensating

landscape gardeners do not always do, study the welfare of the plant as much as the effect it produces. Some of the effects, from a landscape gardener's point of view, were strikingly beautiful, many quaint and grotesque. Had these latter been carried out by a person of less natural taste than Mr. BATEMAN, they would have degenerated into the cockney style. In Mr. BATEMAN's case, there was the less risk of this

Unfortunately, however, the ungenial climate of North Staffordshire was as unfavourable to the health of Mrs. BATEMAN as it was unsuitable for gardening pursuits. Quitting then a spot which will always hold a very high place in the annals of horticulture, Mr. BATEMAN came some few years since to reside principally in Kensington, in close proximity to the Royal Horticultural Society, in whose fortunes he has

matters. We have cited the figures approximately, but they are sufficient to show what a valuable plant Buckwheat is when cereals fail.

OPEN SPACES IN LONDON.—It may be worth while to make a note of the following, from a report just issued by the Parks Committee of the London County Council. The open spaces, churchyards, &c., in the county of less than 10 acres in area, which are at present kept up for the enjoyment of the public, number 203, having an aggregate area of 366½ acres.

that the girth of the tree, No. 1, mentioned at p. 385, is 9 feet 3½ inches, instead of 6 feet 3½ inches.

BARON SIR FERDINAND VON MUELLER.—It is with much satisfaction that we announce the intention of the executors of the late SIR FERDINAND VON MUELLER to erect a monument in the St. Kilda Cemetery, Melbourne, to the memory of the great botanist. The BARON's services were by no means confined to his adopted country. Not a country in the civilised world but benefited by his labours;

on Thursday, December 9, at 3.30 P.M., to receive the report of the committee, to pass the accounts, to elect the committee and officers for the ensuing year, and for the transaction of other general business:—

PROPOSED ALTERATIONS OF THE BY-LAWS AND REGULATIONS.

1. To alter By-law 5 so as to read—"Notice of any proposed alteration of these By-laws must be given in writing to one of the Secretaries at least two weeks before a general meeting, and no by-law nor regulation shall be altered except at a general meeting of the society. A special general meeting of the society may be called at any time on a requisition, signed by not less than twenty members, being delivered to one of the Secretaries at least fourteen days prior to the date of the proposed meeting. The requisition must specify the business for which the meeting is called, and no other business shall be transacted thereat."
2. To alter By-law 7 so as to read—"That the Committee shall, at its first Meeting, appoint a Sub-Committee (to be styled the General Purposes Committee) not exceeding ten in number, for the purpose of considering and reporting upon any matters connected with the society which may be brought before the Sub-Committee, by notice to the Secretaries of the society, and that the functions of that Sub-Committee shall endure until the next Annual General Meeting of the society. The Sub-Committee to have no executive power whatever."
3. To alter Regulation 8 so as to read—"All Roses must be exhibited as cut from the plants. Artificial aid of any and every kind is strictly prohibited, with the exception of wire or other supports, which are only to be used to keep the blooms erect. A bloom left tied will not be counted by the judges. Dressing Roses so as to alter their character is prohibited. A bloom so dressed will be counted as a bad bloom. The insertion of any additional foliage will disqualify the stand. All Roses should be correctly named."
4. New Regulation (transferred from authorised Rules for Judging at Rose Shows).—Exhibition stands should be of the regulation size, viz., 4 inches high in front and 18 inches wide, and be set out with moss or other suitable material. They should also be of a uniform length, viz.:—
For 24 blooms, not less than 3 ft., or more than 3 ft. 6 in.
" 12 " " 1 ft. 6 in. " 2 ft.
" 6 or 9 " " 1 ft. " 1 ft. 6 in.

HOME CORRESPONDENCE.

MUSCAT OF ALEXANDRIA GRAPES.—The matter in dispute between Mr. Smith and the writer on certain points connected with the culture of this Grape has brought forth a challenge which I would fain accept. But I am afraid the editor would not open these pages to a contest which would not be edifying generally, and only instructive in one sense. I may say, however, my interest and experience in Grape growing extend over thirty years, and I can also claim a fair amount of success on the exhibition-table during most of that time. Besides, my experience in this line has been before the public for a decade, and I see no need to change the views I previously entertained and expressed on the points at issue. And it is just because these views do not exactly agree with those expressed by Mr. Smith, that I ventured to criticise his remarks. In his first letter he directed our attention to the necessity of careful ventilation in autumn to secure good flavour, giving one to believe that this was the time most careful ventilation was needed; but in the letter now before me he is for ventilation—I presume "careful"—all the year round. Well, we may now agree on this point; but Mr. Smith has misrepresented me by saying I advised the putting on of a "lot" of air the first thing in the morning. I spoke of timely ventilation in the morning, and also preparing for a sudden outburst of sun in the middle of the day after a dull forenoon; but I never advocated a lot of air being put on at one time. This operation must be gradual as the temperature rises. The most serious difference between us is in regard to shading. I have never been at Hendon, where Mr. Smith labours, or near the place, and if the sun has more power there than it has in Scotland, he may be justified in recommending a shade for Muscats. He must, however, have been aware that we read the *Gardeners' Chronicle* north here, therefore his instructions should have been localised. I may say we never require to shade in Scotland when the heating is properly seen to, and the airing as recommended in my last letter. Early closing and syringing are outside the question under discussion, points, however, upon which we seem to agree. I would now ask Mr. Smith to give us the experience upon which he prides himself, and I will undertake



PORTRAIT OF THE LATE MR. JAMES BATEMAN, F.R.S., TAKEN IN 1871.

(See p. 400.)

Of these, 122½ acres are maintained by the council, 42½ by vicars, rectors, or churchwardens, 27½ by the government, and 16½ by the vestry of St. Pancras.

THE WELLINGTONIA.—A letter from a correspondent last week contained an erroneous date, which we are sorry to say we overlooked. It has brought us a shoal of communications, which we are in one sense very glad to receive, as it shows that great interest is taken in such matters; and, moreover, that our readers are neither few nor indiscriminating. The Wellingtonia (*Sequoia gigantea*) was discovered and introduced by WILLIAM LOBB in 1853, so that it could not have been planted in 1816, as stated by our correspondent. We should also state

scarcely a botanist in the world but was in communication with him. The Rev. W. POTTER "VON MUELLER," Arnold Street, South Yarra, Victoria, should have no difficulty in getting the sum he requires many times over.

LEO. GRINDON.—The friends of this genial and hardworking botanist are taking steps to celebrate his eightieth birthday with fitting compliment and celebration. Mr. GRINDON has done excellent work for Manchester, and for botany generally.

NATIONAL ROSE SOCIETY.—The twenty-first annual general meeting of the National Rose Society will take place at the Rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster,

to kick holes in it if I find the least opening. I would give my name and address for publication if this was a general rule, meantime, I give my initials, W. W. [We have our correspondent's name and address, Ed.]

FRUIT JUDGING.—There is frequently a rule in schedules stating that all fruit in certain classes must be ripe and fit for use, but we seldom see Grapes in this condition at early autumn shows, unless it be Hamburg and other early sorts. Under these circumstances, unripe Grapes are not disqualified, and ripeness becomes a matter of degree. A notable judge was once heard to say, when judging Grapes, that "ripeness was his first consideration." This doctrine, however, is often carried too far, and 1st prizes are awarded to varieties fully ripe, but without any cultural merit, while other well-cultivated Grapes are passed because not fully ripe. Such varieties as Alicante, Gros Maroc, and others that colour well, and acquire bloom long before ripe, have an advantage against white sorts just as ripe, especially Muscat of Alexandria, which is often in better condition for the table, though not finished, than well-coloured black varieties. It would be best if all Grapes were ripe when exhibited, but as this condition is not enforced, superior varieties would in competition be placed on more equal terms were the points for relative value allowed as described in my last letter, because it is invariably the best varieties, excluding the Hamburg, which take longest time to colour well. In regard to mixed collections of fruit, there is more difference of opinion on the relative merit of kinds than in classes represented by distinct varieties only. When the same varieties of the kinds are opposed in collections, which is rarely the case, a judge sometimes places the merits of the one against the other, on the ground that a good dish of small fruits, such as Cherries or Plums, is equal in value to a good dish of large fruits, such as Grapes or Peaches. Suppose two collections requiring to be pointed are composed of the usual kinds, and it is agreed to allow five points as a maximum for good dishes. The Pines, we will suppose, are equal, but there is a difference of two points in the Grapes; there is then give-and-take down to the last dish (Cherries), where a difference occurs again of two points. The points gained therefore by superior Grapes are lost by inferior Cherries. The collections show equal totals, but it is a result which would not be received with favour generally. To obviate the chances of an occurrence of this kind, a graduated scale is needed, similar to the one recommended for the different varieties of Grapes in the *Gardeners' Chronicle* for September 11, p. 136. In answer to the Editor's question on p. 314, *re* the code of rules issued by the Royal Horticultural Society, it would have been a serious waste of time had not some help been derived from the code, which was the subject of a whole year's consideration by some of the most eminent horticulturists. Fruit, however, was very sparingly dealt with, and a system of judging collections was entirely omitted, a fact that was the subject of comment in these columns after the rules were published. The excuse given by one of the members of committee was, that the code should not be accepted as a final settlement, but that the next issue would rectify everything. The new rules have not yet seen the light (so far as I know), and the above hints are given in the hope that they may be useful when the matter is again under consideration. *Ayrshire Lad*.

ROYAL HORTICULTURAL SOCIETY'S MEDALS.

—Presumably, the Lindley medal, of which we have been of late reading, is one of the lapsed honours of horticulture that once constituted something worth having, because rarely bestowed. When that medal was granted, it is hardly probable that it was awarded to all and sundry at the rate of sixty a time. Evidently, it was given only for highly meritorious cultivation, and seldom, that made it an honour worth possessing. Why it has been allowed to lapse probably the council of the Royal Horticultural Society knows best. Possibly, the society's honorary gold medal has taken its place, a medal, apparently like the Lindley, awarded and not given. It would perhaps be just as well if the same course were adopted in regard to medals of lesser value, that are given now far too freely, and which seem to be sought for with an avidity that may be regarded almost as avariciousness. Honour derived from exhibiting good produce of any description from time to time seems to be almost swamped by the desire to secure the medal; but when got, of what value is it! There must be some exhibitors at the

society's meetings who could very well cover their rooms with these medals, and yet they are not content. Give them a bronze one, they rage; give a Banksian silver, they whine for a Knightian; and give a Knightian, they cry aloud for a silver-gilt, and even for a gold medal. All this seems to be very pitiful, and degrades horticulture. I am not sure whether it would not be good policy on the part of the Royal Horticultural Society to suspend medal-awarding absolutely, and thus strangle grumbling ere it is heard. *K*.

A SUCCESSFUL AMATEUR CULTIVATOR.—One has the pleasure occasionally of falling in with a genuine and enthusiastic amateur gardener, who finds in the cultivation of his flowers, fruit-trees, and vegetables the height of enjoyment. From an inspection of the garden of the true amateur horticulturist much may be learned. I recently made the acquaintance of a genial amateur, in Mr. Crowne, of the Box Trees, Long Ditton, whose favourite flower is the Chrysanthemum. His garden is not a large one, but is well filled, and in the summer when the Chrysanthemum-plants are standing outside, every nook and corner is utilised. The collection numbered some 300 plants, and it is no exaggeration to say that not a bad plant could be found among them. The varieties embrace the newest and best, and for a collection of its size, the selection of varieties would admit of little improvement. At the time of my visit to Mr. Crowne's garden the plants were in full splendour, and are arranged in two greenhouses, and forming a sight well worth going far to see. Many of the plants were represented by blooms of exhibition standard. Mr. Crowne has rendered a good account of himself at some of the exhibitions of recent years, having been awarded a Silver Medal by the National Chrysanthemum Society at their show of November 5, 1895, for an exhibit in the incurved section; the Silver Cup of the Ditton Chrysanthemum Society also found its way to the Box Trees on November 12, 1896; and but for just one or two little failings in the incurved stand, it would have brought the same result this year. At Kingston and Ditton he has been very successful with Chrysanthemums. *F. S. B. S.*

YORKSHIRE APPLES.—I thank Mr. Dixon, of Elmcroft, Ripon, and H. H. R. Forest Hill, for their reply to my note, *re* the above. I will try dressings of fresh lime, as recommended by Mr. Dixon, for Cox's Orange Pippin. I have tried lime-rubble and stick-ash freely mixed with the soil when root-pruning and planting, and in due time I hope to be able to report upon it. I will also try Ribston Pippin. I have Margil, which generally gives us a few useful fruits of excellent flavour. *T. Down, Wassand*.

THE GROWTH OF THE STEM OF AURICULAS.

—I read with much interest the article about the lecture of Prof. F. W. Oliver in the *Gardeners' Chronicle* of November 13. I can confirm the observations made by you about the growth of the stem of Auriculas. In April of this year I received a fine lot of *Primula elatior*, which grows wild in this country in some limited spots. I received the plants with a large clump of roots, to which the clayey soil still adhered. I put some of them into the open border, the others in pots only sufficiently large to contain the clumps. The growth was a little checked, but they soon recovered, bore some flowers, made a fair tuft of leaves, which decayed rather early. This and also the mild autumn weather is the reason that they are already showing their tufts of small, new leaves, and now all the plants in the open border are at the same level, while those in the pots project considerably above the margin. I suppose the situation of these latter may be compared with that of the *Primulas* growing in rocky clefts, and projecting their stems about the edges of the crevice. When planting these plants in pots, which, however, will seldom occur, it will be necessary to take this into account. *J. C. Bosch, Beverwijk, Haarlem, Nov. 17*.

TESTACELLA HALIOTIDEA.—Having been a close observer of these slugs for many years at Oxford, where they are fairly plentiful, perhaps the following notes may be acceptable. I have frequently seen them in the act of eating a worm. They seize them, not by the extreme end, but at about a third of their length, and at this point a wound is inflicted, and the worm is drawn in doubled up. It is a very long process, lasting sometimes for hours. I used to look for them on the lawns at night by lamplight, when I found them crawling on the grass, and altogether different from the "sluggish" contracted creatures which were dug up. I found them mostly in rich

loose earth at varying depths down to 18 inches. They could also be found in the daytime by turning up planks or bricks. The weight that they could support was astonishing. I kept many of them in a flower-pot covered with a paving-tile, and often found that they had succeeded in raising it sufficiently to escape, and have also watched them doing so. *Geo. Parish, Ealing, W.*

PERFECT SPECIMEN CHRYSANTHEMUMS.

Permit me a few lines to congratulate my old friend, Mr. Donald, of Short's Green, on his latest triumphs with specimen Chrysanthemums with from fifty to a hundred good blooms upon each, the plants from 1 to 2 yards across. Amid all the changes of fashion, Mr. Donald has pursued this art, and moulded many varieties into superb specimen plants for his big conservatory. His complete success has doubtless been his most pleasing and richest reward. But others, equally or more pleasant, are in store for him in the near future. These are the hearty approval of many of his practical brethren; and the highest compliment they can pay to his energy and perseverance, viz., imitation. Surely the one-bloom theory and practice on stems somewhere in mid-air, far above the sight lines of ordinary mortals, has well nigh had its day, and growers who desire their plants to be decorative ones, can hardly do better than grow such plants as does Mr. Donald. His troop of friends everywhere hope he may yet be long spared to win many other victories as those he has so honourably won. To those who tell us that specimen Chrysanthemums are not natural, I reply they are far more so than the one-stem single-bloom monsters mounted on bamboos in mid-air, and which we have to mount on ladders, steps, or stages to see, touch, cut, or enjoy. *D. T. Fish, 12, Fettes Row, Edinburgh*. [Mr. Donald's plants are magnificent specimens for exhibition, and are very high-class examples of the trainer's art. For the decoration of rooms, however, they are less adapted than well-grown bush-plants with a dozen stems upon each, and every stem bearing one moderately-sized bloom. Such plants can be associated with other decorative subjects to much better effect. Further, other points being equal, the cost of production in each case may be fairly considered, and in the case of trained specimen plants this must be a serious matter. Our correspondent, too, when speaking of Chrysanthemums in "mid-air," that can only be seen by first mounting a ladder, appears not to bear in mind there has taken place a great improvement in the habit of Chrysanthemum plants, and many of the newer varieties grow little taller (under proper culture) than such as *Avalanche*—say, 3 to 4 feet. Mr. Fish, of course, is speaking of plants grown exclusively for the production of large exhibition blooms; but even in such cases, many growers obtain three flowers per plant, unless from exceptional varieties. Ed.]

NERINE CRISPA.—I was much impressed with the beauty and apparent usefulness of a nice batch of plants grown under the name of *Nerine crisper*, is one of Sir C. W. Strickland's houses at Hildenley, a short time ago. There were about twelve bulbs in each of the 5-inch pots, and each bulb had produced a flower-spike about 15 inches long, and each spike bore ten or a dozen flowers. The sepals were long and narrow, and either twisted or turned up at the ends, and of a pale pink colour. The leaves were narrow and grass-like, and the whole formed beautiful and graceful subjects for dinner-table work, or the adornment of the drawing-room. Mr. Smith, Sir Charles' indoor gardener, told me that they were most easy to cultivate, and under ordinary treatment would grow and flower freely. Several representatives of the large-flowered kinds were present, but although the colour, form, and substance of their blossoms were all that could be desired, yet they lacked the delightfully light, graceful habit, and delicate tint of *crispa*. Where there is much table-work, this variety would be found a decidedly valuable addition to the subjects for that purpose, and one not requiring an exceptionally high temperature, or much skill in its cultivation. *R. C. H.*

ROSES.—The mildness of the season enabled me to gather 100 blossoms on November 20, and some of which were very fine, amongst those flowering freely may be mentioned *Souvenir de la Malmaison*, *Homère*, *Madame Faloot*, *Celine Forestier*, *Gloire de Dijon*, and many of the China varieties; the buds of the latter being very useful in decorative designs. The making of cuttings may still be carried on. This matter was touched upon in a recent "Calendar," by Mr. Herrin, and I will merely add,

that in cold soils it aids the rooting if the base of the cutting rest on sand. It is very necessary to make the soil firm about the cuttings, and to make it so when frost has loosened the ground. *H. M.*

"THE NEW FLORA BRITANNICA."—You are quite right in saying that this rare work is one "which

"Syd. T. Edwards, del." appears on plate 129 (*Amaryllis vittata*), with that of "W. Darton & Co., Sc." as engravers; and on t. 135 (*Gladiolus cardinalis*), we get "Syd. T. Edwards, del. et sculpt," apparently for the first time; the date August 1, 1790. The next plate has "Syd. T. Edwards, fecit," November 11, 1790. So much for the *Botanical*

subjects or species being represented on each page. In turning over the plates, a strong family-likeness to those of the early volumes of the *Botanical Magazine* is very evident; still, on comparing them, they are rarely, if ever, quite alike, though it seems probable that the same original drawing has often served for both series of plates. As an instance of what



FIG. 119.—CHRYSANthemum MRS. CHAS. BIRCH: PURE WHITE. (SEE P. 406)

plant-lovers will treasure"—if they can get it!—and I hope that our good friend W. B. Hemsley, of Kew, will at his leisure, tell us somewhat of its authorship and history. Sydenham T. Edwards, whose drawings are represented in its pages, as engraved on copper by S. nom, succeeded J. Sowerby, as the botanical artist of the *Botanical Magazine*, and his signature

Magazine. My own copy of *The New Flora Britannica* is a handsome large quarto, beautifully bound in crushed green morocco, with handsomely-embossed borders and rich gilt tooling. The edges are also richly gilt, and fine in colour—real old gold; not the thin yellow Dutch-metal now so common. The plates are bold and faithful in colour, two or three

I mean—one of many. If we turn to the plate of Strelitzia Regina, *Bot. Mag.*, t. 119 (dated May 1, 1790), and compare it with plate 53 of the 2nd volume of *Flora Britannica* (1812), we shall perceive that a leaf has been added behind the flower, and there are some minor modifications in the inflorescence itself; still, no one could doubt but

that the same original sketch had served for both plates, and we find this close resemblance, but rarely, if ever, an absolute likeness in many of the other plates in the book, as on plate 6. *Amaryllis formosissima*, the leaf of which is differently arranged as compared with *Bot. Mag.*, plate t. 47, and the colour of the flower is more crude and darker, or the crimson-red has become discoloured. This again is a striking feature, viz., that the colours of the *Flora Britannica* are not so pure and clear and lasting as those of the earlier volume of the *Bot. Mag.*; as an instance of this, compare plate *Bot. Mag.* t. 52 with that in *Flora Britannica*, xxvi. (*Gentiana acaulis*), the blue of the older plate, 1788, being far more pure and clear than that of 1812. This *Flora Britannica* may probably have been an outcome of Edwards' secession as artist of the *Bot. Mag.* It is curious that both Pritzel in his *Thesaurus Bot. Lit.*, and Daydon Jackson in his *Guide to the Literature of Botany*, both cite this *Flora Britannica* under Edwards' name as *New Botanic Garden*, although on the title pages of the work itself, *The New Flora Britannica* is clearly and unmistakably given. Is it possible that the same plates have been issued under that or some other similar title? I have seen a good many book and sale catalogues, but only once saw a copy cited, which was the one now in my library. The work is well printed on good sound paper, and as you observe in your note in *Gardeners' Chronicle*, p. 366, the text is singularly exact and trustworthy, although no author's name is given. Could it have been edited by Mr. J. Bellenden-Ker, or was it compiled by Edwards himself? These are queries upon which Mr. Hemsley may possibly be able to throw some light, and I hope that a note thereon may be added to the entry of this and other rare works in the forthcoming *Catalogue of the Lindley Library*, for the appearance of which we are anxiously waiting. *F. W. Burbidge.*

CHRYSANTHEMUM MRS. CHAS. BIRCH.

THIS new variety is a seedling raised by Mr. Godfrey at the Exmouth Nurseries. It is very distinct in general form, and in the shape and arrangement of the petals, the latter being almost entirely tubular, and not flattened or spatulate, and the curling is irregular, the result being a very solid bloom of great depth (see fig. 119, p. 405). The colour is usually pure white, but sometimes the base of bloom is shaded with lavender. Mrs. C. Birch was awarded a First-class Certificate by the National Chrysanthemum Society on Nov. 1, last.

Obituary.

HORACE BILLINGTON.—The death of Horace Billington (chief Curator at the Government Botanical Gardens at Old Calabar), news of which, from neuritis (?), has just been received at the Foreign Office, occasions a loss to the country, and certainly to the West African Protectorate, that it is difficult to estimate. He was the youngest son of the Rev. G. H. Billington, rector of Chisbury, Dorset, in which remote village he was brought up, acquiring that sympathy with Nature and the love of observation of plants, birds, and beasts which stood him in such good stead in the later years of his all too short life. Mr. Billington came to London about eleven years ago, and he not only entered the office of Mr. Thomas Christy, in the City, but resided at his house at Sydenham, where he had the opportunity of watching the propagation of the plants and seeds, and learnt especially the habits of different African products. When in the City he attended the sales, and watched the produce coming from abroad. By this means he was enabled to estimate the proper plan of packing and selection. In the course of time he was offered an appointment by the Royal Niger Co. Soon after his arrival the managers of the different estates found that they had in Horace Billington a man far above the ordinary level of trained assistants sent out to the colonies, and a competition sprang up between these men as to who should have his services, because the small estates entrusted to his care answered remarkably well. He took advantage of the information he had

received from planters and travellers, and when he arrived in face of the work, he knew what to do, and how to select his land; and instead of attempting to make the water run up hill in pipes, he found streams at higher levels, and conducted these through his plantations. Sir Claude MacDonald, who is well known for his thoroughness in all that he does, made enquiries, and found that there was at the Niger a man of the name of Billington; he traced out his connections in England, and obtained the promise of an interview as soon as he arrived home for his holiday. It was not long before he entered into arrangements through the Foreign Office with him to go out for the Government and open a botanical garden at Old Calabar. Mr. Billington knew exactly what was required, and although at home recruiting his health, he worked up his collection of books and also supplies of seeds, tools, and other requisites, so that when the time came for his return to the Niger he was able to open his garden and go to work at once.

It was unfortunate that the expenses were so critically examined that Mr. Billington was very cramped in his requirements for cash, otherwise he could have made many excursions into the interior and have obtained much more quickly the valuable information in his possession at the time of his death. It is also very unfortunate that a good man was not put with him to assist in detail in the trying climate of Old Calabar. Further, such a man would have learnt very much from Mr. Billington's experience, and the Government would have had some one now to rely upon to continue the valuable work started by Mr. Billington.

Another singular trait in Mr. Billington's character was the way in which he watched and chronicled information regarding health in the dangerous climate of the Niger. He said in his letters how much he regretted that the young men came out with unsuitable clothing—for instance, caps instead of pith or felt helmets, because no one had cautioned them as to their manner of living. When a bright sun was not shining, they believed that a cap was quite sufficient protection for the nape of the neck; the consequence was that they died one after another.

Mr. Billington, when in the service of the Royal Niger Co., was appointed to attend to the hospitals, to prevent the jealousy of the different estate-owners. This gave him an insight into the diseases which existed, and their mode of treatment.

At the time of Mr. Billington's last sojourn in this country, he arrived looking and feeling very ill; but the air which he found in his native village in Dorsetshire picked him up, and when he was about to return, his friends all congratulated him upon his robust appearance, while the official medical examination before returning was completely satisfactory.

Sir Claude MacDonald asked him on one occasion how he accounted for his healthy looks, when other people, on coming from the Niger, looked so sickly? He said that perhaps it was owing to his being so tall, his mouth being higher than that of others from the ground and that his abstemious habits, which he had practised from boyhood, had served him a good turn.

The brief telegram to the Government, announcing his death, furnishes no particulars. The last letters received from him said how well he was in health.

The reports made to the Government on the plants to be found in the Niger district surprise botanists in this country, for to each was allotted its value for commercial purposes or otherwise. This was a line that no other foreign botanical garden had ventured on. During his visit to this country he was able to set at rest many doubtful subjects of the source and origin of drugs, and the trees that yielded the supplies.

TRADE NOTICE.

We understand that Mr. J. H. Nieman, who was some years ago "decorator" at Mr. John Wills' establishment, South Kensington, has been appointed manager of the Floral and Horticultural Bureau, 371, Oxford Street, W.

SOCIETIES.

ROYAL HORTICULTURAL Scientific Committee.

NOVEMBER 23.—Present: Dr. M. T. MASTERS (in the chair); Mr. DOUGLAS, Rev. W. WILKS, and Rev. G. HENSLAW (Hon. Sec.).

Gall on Jasmine.—With reference to the specimen brought by the secretary to the last meeting, Mr. MacLachlan reports that it is quite impossible to fix on anything in particular in the way of a cause, but the puncture of a *Phytoptus* is the most probable.

Phyllotreta on Cruciferae.—He also observes, with regard to the beetles show by Mr. Michael as destructive to Stocks, &c., that "the genus is the one to which the 'Turnip-flies' belong. There are about a dozen species in this country, all being much alike. They all frequent the Cruciferae, and the fact that this one was also found on *Tropeolum* only intensifies the fact that most things which feed on the former will also feed on the latter, as—e.g., the larvae of 'Cabbage white,' the interpretation being that both contain the same chemical vegetable products."

Dahlia, Hybrid (?).—Flowers were received from R. J. Lowe, Esq., of Shirenewton (Hall, Cheshire, supposed to be the result of crossing a Dahlia with the pollen of a Sunflower. The appearance was that of a Dahlia, the disc alone being rather larger. Dr. Masters undertook to examine them more minutely.

Monstrous Cyripedium.—Mr. Veitch sent a plant of *C. sitius* bearing a single flower. It had no lip, but two columns. It was referred to Dr. Masters for further investigation.

The Copper-plant.—Dr. Masters exhibited an illustration of *Polycarpa spirostylis*, F. von Mueller. It has the above name, as it is said only to grow where copper is to be found, and that its presence is an indication to miners of the existence of that metal in the neighbourhood. It is found by the mines of Watsonville, &c., N. Queensland.

Proliferous Chrysanthemum.—A specimen bearing three flowers was received from B. Graeves, Esq., of Broome Hall, Dorking. They were remarkable for consisting of a dense mass of minute heads instead of distinct florets. Some of the show Dahlias, Dr. Masters observed, consisted of this peculiarity, the separate heads combining to make a single large "flower." The peculiarity is characteristic of the genus *Echinops*, only the individual heads contain but a single flower each.

DEVON AND EXETER GARDENERS.

NOVEMBER 24.—The subject treated of at this meeting was "Herbs: their Cultivation and Uses," the essayist being Mr. W. Andrews, gr. at Elmfield, Exeter.

After mentioning the ordinary pot-herbs that everyone is acquainted with, the old-fashioned medicinal herbs, such as Camomile and Peppermint, Horehound, Hyssop, Thyme, good as an ointment for gouty and sciatic pains, were alluded to, and their economic uses in the household, especially in rural districts, was enlarged upon. The lecturer pointed out the value of Borage, Marjoram, and Thyme as honey-yielding herbs that everyone who kept bees ought to grow largely. The lecture, of considerable length, was eminently practical and suggestive, and contained much useful information.

ELGIN CHRYSANTHEMUM.

NOVEMBER 24.—The second annual exhibition of Chrysanthemums, fruit, and vegetables, under the auspices of the Elgin Chrysanthemum Show Committee, was held on the above date. The arrangements were carried out in admirable order and efficiency by the energetic honorary Secretary, Mr. J. Thompson, assisted by a willing committee.

There were about 300 entries. A handsome Challenge Cup, valued at ten guineas, presented by Mr. Thompson, the Secretary, for eighteen Japanese blooms, brought some splendid collections, and the trophy was deservedly awarded to Mr. Barbour, gr. to Mr. GREGORY, Maryhill, who had an exceptionally fine collection, the blooms being marked for their freshness, colour, and size. Among the finest of them were Charles Davis, Mrs. E. W. Clarke, Van den Heede, and M. Chenon de Leché. The collection shown by Mr. McDONALD, Palmercross, came in a good 2nd.

In incurred blooms, the prize for the best was awarded to Mr. SMITH, Innes House, for a William Tunnington.

There were only two entries for wreaths, Mr. BEATTIE, florist, obtaining 1st prize.

There was a splendid display of hand and table bouquets of Chrysanthemums. In the amateur section, Mr. THOMPSON, Bishopmill, carried off the 1st prize for nine blooms in six varieties, one of them being "Hairy Wonder," and another a "Charles Davis," the latter gaining him also a prize for the best Japanese bloom shown in the amateur classes.

Mr. ROYAN, Fortes, was awarded the 1st place for his collection of incurred blooms. He showed a lovely bloom of "Jeanne de Arc," which won the prize for the best incurred among amateurs' exhibits.

A new feature was a competition confined to ladies for baskets of Chrysanthemums and foliage, and in the seven entries forward, there was a pretty and attractive display, the various baskets being arranged with great taste.

There was a good average display of pot plants, though these had not the attractive appearance of the cut flowers. The special prize for the best specimens was awarded to Mr. McDONALD, Palmercross.

Fruit and vegetables made a splendid show, the vegetables especially being greatly admired. In a class for a collection of vegetables, which attracted considerable notice, Mr. SMART, Leamurdie, carried off the Medal.

Mr. BEATTIE, florist, had a tastefully laid-out stand for exhibition only, containing some rare blooms of Chrysanthemums and Narcissus, as also numerous samples of Apples, including the Ecklinville and Lord Suffield.

Mr. W. WALLS, the Earlswood Nurseries, Ltd., also sent for exhibition a number of famous blooms; while Mr. WISEMAN, seedsman, kindly sent a number of Palms and other pot plants to decorate the hall.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

NOVEMBER 25.—Present: G. S. Ball, Esq., of Ashford, Wilmslow, in the chair; and Messrs. A. Warburton, Wm. Stevens, Geo. Law Schofield, S. Gratrix, J. Leemann, H. Greenfield, P. Weathers, R. Johnson, Wm. A. Gent, and Anderson.

There were seven Medals forthcoming that had been presented at a former meeting, together with a beautiful Medallion of the late Charles Darwin; and the Chairman, Mr. Ball, indicated that he meant to bear the expense of the die of the Silver Medal presented. The design is in every way appropriate, the name of the winner being on the obverse.

By far the larger number of plants brought before the committee were passed over; there were, however, three plants submitted which received First-class Certificates, viz., *Odontoglossum* × *Gratrixianum* (O. Halli × O. elegans), a combination of yellow and bronzy colours, which will improve under cultivation, and be regarded as a desirable acquisition. One of the others was a beautiful and a distinct seedling *Cypripedium* × *Veitchii* × *niveum*, a fine variety, with the characteristics of both parents, and showing the blending of the softer tints in an exquisite manner. The owner would do well to bring it before the committee when better established. It was shown without a name, but that omission will be amended in the Society's records. The third one, *Cypripedium* *insigne* *Sanderianum*, was in fine flower, the colours clear, without spots, and altogether uncommon. This came from Mr. GRATRIX.

Of Awards of Merit there were no fewer than twenty, which, taken in the order in which the plants were dealt with, were *Cypripedium* × *Minoes* × *C. Spicerianum* and *O. Arthurianum*, *C. insigne* Dorothy, of the *C. Sanders* type; a beautiful *C. x Beckwith* and *C. Boxall*, splendidly spotted, which will require another year to fully prove it; *C. Alliani* × *C. Spicerianum* and *C. Curtisii*; *C. x Ceres*, *C. hirsutissimum* and *Spicerianum*, a grand flower, which will improve in cultivation; and *C. nutans* *superbum*, a magnificent flower; *C. Belletianum* and *C. Fascinator*, as well as the pretty *C. Minoes*, were honoured with 2nd place. *C. Leeannum giganteum* was shown in fine style.

Cattleya labiata *Eugenie*, a beautiful, clean, clear coloured example, was similarly honoured.

The finest form ever seen of *Oncidium* *Forbesii* was shown by Mr. ANDERSON under the name of *O. F. splendidiolum*, which, in regard to colour and form, is unmatched, and well deserved the Award of Merit unanimously given.

Other plants were a seedling *Cattleya* from Mr. LEEMANN, called *Rosa*, and *Dendrobium splendidiolum grandiflorum*, with a pendulous raceme of grandly coloured blooms, equally in every point a flower of the spring.

These plants came mainly from members sitting as experts, although the strict rule of non-voting was observed by all those whose exhibits came up for an opinion.

Mr. J. ROSSON, nurseryman, Bowden, showed a varied group, and was awarded a Silver Medal for his pains. This is his first exhibit of importance, and it may be a means of inducing others to add their quota to future meetings of the North of England Orchid Society.

LEAMINGTON CHRYSANTHEMUM.

NOVEMBER 25.—The annual show of the Leamington, Warwick, and District Chrysanthemum Society, was held in the Winter Hall, Leamington, and was visited by large numbers of people.

The more attractive portion of the exhibits was shown in the Pump Room, including a beautiful display by Mr. F. PERKINS, of Leamington, who was awarded a special Silver Medal. Some of the designs in Chrysanthemums and other flowers were very artistic, and not only tasteful in form, but also in the arranging and blending of colour.

Mr. J. KITLEY, of the Castle Nurseries, Warwick, exhibited some of the choicest plants from his houses, many of them well-grown specimens; and other displays were made by honorary exhibitors, including Messrs. HINROW BROS. (Warwick), CLIBBAM & SONS (Manchester), and IRWIN & RAPER (Leamington).

The competition in the various classes was keen. In the open classes for Chrysanthemum plants, Mr. R. GREENFIELD, jun., of Leamington, swept the board with a collection of magnificent specimens. He obtained 1sts for single plants; three dissimilar varieties; a group arranged for effect; and a special for the best six plants.

Out blooms were in abundance, and the highest excellence was attained by many of the exhibitors. The competition for Mr. C. A. Smith Ryland's special prizes was close, and the premier award fell to Mr. ALBERT CHANDLER, of Cotton House, Rugby, who was followed in order of merit by Mr. R. GREENFIELD, jun.

Mr. SMITH-RYLAND himself won two 1sts for incurred blooms, and the 1st for blooms of the Japanese variety. Premier awards in other cut bloom classes were also secured by Messrs. A. CHANDLER, W. FRASER (Woodon), R. GREENFIELD, jun., and FINCH & CO. (Milverton).

A special prize given by Mr. W. M. Low, of Wellesbourne for the best collection of fruit, was secured by Mr. H. LIXBY, Wellesbourne House. Another special prize, by Messrs. Thomson and Sons, Clovenfords, for black Grapes, went to Mr. W. R. MANN, of Leamington. The table decorations, bouquets, and various other designs by lady amateurs were extremely tasteful.

In the fruit and vegetable classes, and the competitions for table devices, the merit was remarkably even. In the latter the first prize was secured by Messrs. FINCH and Co., who had a most elaborately adorned table. Second honours fell to Mr. W. VAUSE, Leamington. *Birmingham Daily Mail*.

DUNDEE CHRYSANTHEMUM CARNIVAL.

NOVEMBER 25.—This event took place in the Drill Hall, Dundee, on the above date, and a grand and imposing exhibition it was. The various competitions were well contested, the quality of the plants and flowers was good; never before has Dundee enjoyed so fine a spectacle as on this occasion. The president of the society is W. S. MELVILLE, Esq., the secretary W. P. LAIRD, and Mr. DAVID CROLL as treasurer. These able officials being assisted by an excellent executive committee. Everything passed off satisfactorily, and it is to be hoped that the financial results will afford encouragement for the future. The show was opened by Sir WILLIAM HARCOURT, who was accompanied by the Lord Provost and the members of the corporation. Sir WILLIAM HARCOURT, in a humorous speech, declared the show opened. The chief feature of the show was the competition for the Challenge Cup, which was of a very splendid character. The blooms shown in this contest were very fine and fresh looking.

CUT FLOWERS (OPEN TO ALL).

Thirty-six Blooms, Japanese, not fewer than four varieties, 1st (Challenge Cup, presented by Mr. J. M. White, Balrudery, and £3 10s.), James Beant, gr. to Mrs. GEORGE ARMISTEAD, Castle Huntly; 2nd, A. McDonald, gr. to Mrs. STEPHEN, Helenalea, Broughty Ferry.

Twenty-four Blooms, Japanese, not fewer than twelve varieties, 1st (Challenge Cup, presented by Mr. J. J. Watson, Ballinard), John Bell, gr. to ex-Sheriff ROBERTSON, Burnside, Forfar; 2nd, D. Nicoll, gr. to Mr. J. W. BELL, Rosie, Forganfield.

Six Vases Japanese Chrysanthemum Blooms, six varieties, three blooms of each, 1st (Challenge Cup, presented by Mr. J. M. Smeaton, Broughty Ferry, and 30s.), David Nicoll, gr. to Mr. J. W. BELL, Rosie; 2nd, D. KELLOR.

Six Vases Chrysanthemums, distinct (not disbudded), any foliage, 1st (flower-vases, presented by Mr. McBurney, china merchant, and 10s.), JAMES BEAT; 2nd, A. Duncan, gr. to Captain CLAYHILLS HENDERSON, Invergowrie.

OPEN TO AMATEURS ONLY.

Twelve Blooms, Japanese, not less than six varieties, 1st (Challenge Cup, presented by Mr. J. B. Lawson, and 12s.), EMIL DOWMERT, Monifeth; 2nd, JOHN CLARK, Southmartine Road.

Three Vases, Japanese Chrysanthemum Blooms, three varieties, three blooms of each, 1st, JAMES DAVIDSON; 2nd, WALKER MELVILLE.

PLANTS (OPEN).

Four Pots Chrysanthemums, disbudded, distinct, 1st, D. KELLOR; 2nd, JAMES JOES.

Best Japanese Bloom in Show (gardeners' class), Mr. D. NICOLL, Rosie.

Best Japanese Bloom in Show (amateurs), EMIL DOWMERT, Monifeth.

The six medals of the Society were awarded as follows:—Gold Medal for Chrysanthemums, NORMAN DAVIS, Framfield, Sussex; Gold Medal for Collection of Plants and Fruit, Messrs. JOHN LAING & SONS, Forest Hill, London; Gold Medal for Octagonal Group, Mr. WILLIAM COLOMBSTER, Ipswich; Silver Medal for Zonal Pelargonium, &c., Messrs. CANNELL & SONS, Swanley, Kent; Silver Medal for Collection of Chrysanthemums, Messrs. DOBBIE & CO., Rothesay.

The competition in the specimen-plant classes was disappointing, as was that in most of the fruit and vegetable classes, although those who were awarded the higher prizes showed produce of fine quality, and especially good were Grapes, Apples, and Pears.

Honorary exhibits were numerous, and those from the south were very creditable, Mr. NORMAN DAVIS, of Framfield Nursery, Sussex, showing a grand collection of cut flowers, similar to that which attracted so much attention at the National Chrysanthemum Society's Show at the Royal Aquarium.

Messrs. LAING & SONS, of Forest Hill, showed an interesting collection of miscellaneous plants, cut flowers, and hardy fruit.

The Isthemic Guano Company set up a fine group of plants.

Messrs. CANNELL & SONS exhibited cut blooms of some Pelargoniums, of new varieties of Cannas, and some fine bulbs of Onions.

Messrs. DOBBIE, of Rothesay, had a group of mixed plants, as well as a stand of cut flowers.

Messrs. G. BUNYARD & CO., Maldstone, showed a very fine collection of Apples, which met with a good deal of admiration from the visitors, and which was one of the chief features of the show.

Messrs. LAIRD & SINCLAIR, nurserymen, Dundee, contributed a good, interesting, and extensive group of hardy and greenhouse plants and cut flowers, the whole making a pleasing exhibit.

Messrs. D. CROLL & SONS, Messrs. HARLEY & SONS, and Messrs. STONRIE & STONRIE also contributed groups of a miscellaneous character, varied in style, and as regarded their composition. A. O.

ABERDEEN CHRYSANTHEMUM.

NOVEMBER 26, 27.—This newly-formed Society held an exhibition on the above dates in the Art Gallery, Aberdeen. The idea of instituting such an exhibition was first ventilated at the annual meeting of the Royal Horticultural Society of Aberdeen last year, but as the funds of that Society were not sufficient to render such a project practicable, the matter was dropped for the time being. However, as there was a general desire that an exhibition of the kind should be held, a number of gentlemen who had specially interested themselves in the matter shortly afterwards formed themselves into a society for the purpose.

The second exhibition of the Society showed a marked superiority over the one held last year. The quality was greatly superior, and the entries (400) were nearly double. The flowers shown by Mr. James GRANT, gr. to Lady CARRON, Crimonmogate, were specially meritorious, and he worthily carried off the prizes for the finest single Japanese incurred bloom, as well as the finest incurred in the show.

In the amateur section the specimens were very good, notably those shown by Mr. GEORGE STEPHEN, Cuparstone Lodge. The Chrysanthemums in pots attracted much attention by reason of their beauty of colour and grouping. A feature of the exhibition was the superb collection of fruits and vegetables.

The following are the names of the gentlemen who carried off the principal special prizes presented for competition:—Twenty-four Japanese, Mr. J. GRANT, Crimonmogate; twelve Japanese, Mr. FRASER, Craithes Castle; six Japanese, Mr. D. CHAPMAN, Aden House; twelve incurred Chrysanthemums, Mr. J. GRANT, Crimonmogate; twelve varieties of Chrysanthemums, not disbudded, Mr. MACDONALD, Balgowrie.

Considerable attention was devoted to several stands sent for exhibition only. Messrs. CANNELL & SONS, nurserymen, Swanley, Kent, had a beautiful display of winter-flowering Pelargoniums, and some Chrysanthemum novelties. Another notable collection was that from Messrs. SMITH & SONS, Aberdeen. Brilliant Chrysanthemum blooms were worked into wreaths, crosses, and other devices, resulting in a most dazzling display. There was also an exhibit from Mr. W. WALLS, Earlswood Nurseries, Surrey, showing numerous and beautiful specimens of the newest Chrysanthemums. Messrs. BEN REID & CO., Aberdeen, had a fine table of Conifers.

ROYAL BOTANIC.

NOVEMBER 27.—A meeting of the Fellows of the Royal Botanic Society was held on the above date in the Society's gardens at Bogen's Park, Dr. Boxall presiding. Lord Suffield, Lord John Cecil, and eight others were elected Fellows, and six were elected members. There are two nominations for Fellowship at the next meeting.

The Chairman observed that there were on exhibition in the gardens some very fine specimens of the *Cypripedium* *insigne*.

Mr. Sowerby, the Secretary, called attention to some Kola plants grown in the gardens, and said that the tree, which was a native of the West coast of Africa, between Sierra Leone and the Congo, belonged to the natural order Sterculiaceae. The seeds, several of which were contained in a fleshy fruit, 4 in. to 6 in. long, were the well-known Kola nuts of West Africa, where they had been used as far back as it was possible to trace. It was estimated that Kola paste is five times more sustaining than Cocoa; it contained over 2 per cent. of pure caffeine, and, compared with Tea, Coffee, and Cocoa, the Kola preparations were far more nutritious and did not create biliousness, as did Cocoa and Coffee, nor nervous excitability, as in the case of Tea, so that the problem of "What may we drink?" might probably be solved. A number of these plants were propagated at Kew in 1880, and distributed to Calcutta, Ceylon, Zanzibar, Demerara, Dominica, Sydney, Mauritius, Java, Singapore, and Toronto, where the Nuts were now produced. It had been reported from Jamaica that if a demand should arise for them in this country, the Nuts could be shipped thence to the extent of many tons per year. Notwithstanding its important properties, it is only lately that any great demand has arisen for the production. As medicinal agent, it is specially valuable as a powerful nerve-stimulant.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 29.—A meeting of the Floral Committee took place at the Royal Aquarium on the above date, and though at the end of November, a few interesting flowers were staged.

First class Certificates of Merit were awarded to Japanese Mrs. J. R. Tranter, shown and raised from seed sent from America, by Mr. J. R. Tranter, Henley-on-Thames, a reflexed flower, having the build of Madame Carnot. The basal petals deep lilac pink, with a white centre; cut blooms, and a plant, the blooms above medium size, full, and symmetrical in shape, being exhibited; and to Japanese Violaceum, a flower very like Vivand Morel in colour (with perhaps more purple in it) and built, and not to be distinguished from some of the characters the former occasionally assumes—from Mr. E. BECKETT, Aldenham House, Elstree (First class Certificate), but only by a bare majority of the committee voting for the award.

Mr. WILLIAM WELLS, Earlswood, sent one or two market varieties—a somewhat vague term—one of them named Setting Sun, in the way of Golden Gate, but with more bronze in its colour; very bright and pleasing.

Two very pretty feathery-flowered varieties were Commended for late cutting purposes, viz., Sam Creswell, soft lilac pink, with pleasing feathery blossoms—very pretty; and Mrs. W. Butters, small white feathery petals—very attractive indeed, and very promising.

Mr. A. HAGGART, the Gardens, Moor Park, Ludlow, sent Moor Park, pale bright crimson, with golden-amber reverse, in the way of Col. W. B. Smith, but not large enough for show purposes as shown.

From Mr. G. W. FORBES, Regent House, Surbiton, came a number of seedling single-flowered varieties, all more or less coloured, which he stated he had raised from the single-flowered white variety Purity.



The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.					No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (—) the Mean for the week ending November 27.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.				
0	3 +	18	4	+ 218	— 40	2 +	205	38.8	4
1	4 +	23	8	+ 58	— 31	5	182	25.7	15
2	3 +	27	8	+ 116	— 115	3	164	21.5	13
3	1 —	15	32	+ 144	— 135	3	165	20.5	10
4	1 +	16	26	+ 84	— 148	3	155	23.7	11
5	1 +	26	8	+ 268	— 214	3	147	22.7	13
6	5 +	26	0	+ 135	— 74	5	197	30.8	11
7	3 +	28	3	+ 192	— 132	0	175	30.4	11
8	2 +	30	1	+ 277	— 102	1	183	37.1	5
9	3 +	27	2	+ 88	— 37	2	208	35.4	18
10	2 +	34	0	+ 223	— 97	0	195	41.4	19
* 1	4 +	48	0	+ 416	— 82	7	194	30.5	26

The districts indicated by number in the first column are the following:—

- 0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

ENQUIRY.

"He that questioneth much shall learn much."—BACON.

SKELETON LEAVES.—Can one of the correspondents of the *Gardeners' Chronicle* kindly tell "Leirion" how to make skeleton leaves (Oak, Chestnut, &c.) so as to leave small devices, letters and figures still green and undisturbed on the network of veins.

NOTICES TO CORRESPONDENTS.

ARALIA VEITCHI: *Reader.* Graft on *A. Guilfoylei* in a close case, doing so either by approach or detached scion, the former, of course, the surer method in the hands of a novice.

ATACCIA VIRIDIS: *H. R.* If you sought *Ataccia* in the *Dictionary of Gardening*, you would not find all the species under that name, but some of them under *Tacca*—the Malay name. *A. or T. viridis* does not occur. The plants do well in a mixture of loam, peat, and sand, and being natives of Burmah, Malaya, Madagascar, and other warm regions, they must be cultivated in the stove. The plants require but little water when at rest. Propagation is by division of the roots.

BOOKS: *G. H. H. Vines' Students' Text-Book of Botany* (Swan, Sonnenschein: 1895); *Handbook of Systematic Botany* (Warming), edited by Prof. POTTER; same publishers. These are works of a general character. If you require books for a particular purpose, we will endeavour to assist you. —*Books.* No. 1. We are unacquainted with the one that you name. *My Gardener*, by H. W. Ward, is a very good work by a professional gardener, quite up to date. It is published by Eyre & Spottiswoode, East Harding Street, London, E.C. No. 2. This is one of the best of its kind, and a useful book. No. 3. Not sufficiently useful. *Nicholson's Encyclopedia of Gardening*, four vols., is a much more suitable present. It is published by Upcott Gill, 171, Strand, London, W.C.

CARNATION: *G. W.* The usual *Carnation fungus*, *Uredo dianthi*, for which we can suggest no effective remedy. All diseased plants should be burnt. *M. C. C.*

CARNATIONS: *W. L.* *Carnation-rust*, *Uredo Dianthi*.

CHRYSANTHEMUM SPORT: *C. G.* The bloom is an uncommonly weak one, but the colour bright and pretty. Give it careful culture next season. A bright yellow-flowered *Vivand Morel* should be valuable.

CROWN BUD IN CHRYSANTHEMUM PLANTS: *B. P.* What is meant by the "crown" bud was fully explained by cut and text in *Gardeners' Chronicle*, August 29, 1896, p. 249. The "first" break usually occurs between the middle of April and the end of June, and the accompanying bud is not "taken." The second, or "crown" bud, generally forms in August. This, however, must not be read as applying to "tops" struck late, and flowered in small pots.

CUCUMBER-HOUSE, 200 FEET LONG, AND 14 FEET WIDE: *W. J. B.* The wire-netting would, as you suggest, answer sufficiently well, provided you made it sloping, and nearly parallel to the roof, which is easily done by having the central row of posts taller than those at the sides. But we are not sure from your words that it is a trellis that you want, or merely something wherewith to confine the seeds (soil) at the sides of the bed. If the latter, the plan proposed would doubtless answer, but it would not be so good as a wall of boards—rough slabs, such as the sawyers take off in squaring timber; or of bricks, or concrete; the evaporation of moisture from the bed, and the consequent necessity of affording large quantities of water and manure-water to the soil at frequent intervals, being a constant source of expense. You are quite right in wanting to raise the Cucumber-plants up to the light; a 2 to 3 feet of stem is as long as it ought to be. You will find good varieties in Covent Garden Favourite, Cardiff Castle, Lockie's Perfection, Sion House, and Tender-and-True. Any nursery or seedsmen in a large way of business would furnish seed of the varieties named. We cannot recommend any particular house.

DISEASED PEARS: *R. F. W.* Too rotten to determine the variety. There is no apparent fungus, except what results from decay. From the decayed fruit the cause cannot be determined, as there is no apparent difference from ordinary rot. *M. C. C.*

DISFIGURED LEAVES OF ORCHIDS: *R. N. H.* Anything that gives a sudden check to growth, as cold draughts from ventilators or door, or the effect of cold on removal from the culture-house to some other place, impure air, or air impregnated with gas, &c.

GRAPES IN TOMATO-HOUSE: *W. J. B.* Owing to the length of time required to perfectly ripen Gros Colman Grapes, we could not advise you to plant this variety. Some early-ripening variety, like Black Hamburgh, Alicante, Alnwick Seedling; as white Grapes, you might successfully grow Chasselas Vibert, and Diamant, an oval Sweetwater, ripening without artificial heat; flesh firm, sweet, and pleasant eating. If you plant so many as four rows of Vines up the middle of the house, and one row in each side-bed, it is only a small part of the beds that will be available in a few years for Tomato culture; so that the two kinds of crops cannot go on for long in the same house. Better divide the house with a partition, cultivating Tomatos and Vines separately, and this, too, without waste of space.

NAMES OF FRUITS: *F. W.* Apples: 1, Hambledon Deux-ans; 2, Royal Russet.—*E. M. P.* Apple, Tibbett's Pearmain.

NAMES OF PLANTS: *Correspondents not answered in this issue are requested to be so good as to consult the following number.*—*J. A.* *Laelia anceps* *Sanderiana*, a close ally of *L. anceps Dawsoni*.—*J. B.* *Cymbidium Mastersii* and *Miltonia Clowesii*.—*T. D.* 1, *Retinopora squarrosa*; 2, *Echinops Ritro*.—*Japanica.* *Origanum majorana*, the common Marjoram.

PHAIUS: *A. G.* The black spots arise from any injury to the plant, or from the application of water at a lower temperature than that of the house.

RASPBERRIES FOR MARKETING: *W. T.* A list of varieties is given in our "Hardy Fruit Garden" (see p. 398, of the present issue).

RICHARDIA SPATHES COMING WITH GREEN STREAKS: *Reader.* Usually the result of extra vigour, induced by over-manuring at some period of the growth of the plants. When that is the case, the exhaustion of the soil in the pots will bring about improvement. You can do nothing now to prevent the green streaks appearing.

TOMATO-HOUSE 30 FEET WIDE: *W. J. B.* In order not to waste the area available for planting, the walks should not be more than 2½ feet wide, and if they are made to surround the central bed, this would give a width of 9 feet to that, and a bed on each side of 8 feet in width. If the plants are to be grown erect, with a single stem, they may be planted in rows 2 feet apart, running north by south, and 1½ foot apart in the rows. We have seen Tomato plants put out much closer than this that bore extraordinarily heavy crops of fruit. Of course, close attention must be paid to the removal of laterals, and that the growth be sturdy, yet excessive water should not be extravagantly afforded, and air should be given whenever the weather admits of it being done safely—night and day in the summer, and in sufficient volume to prevent drawing of the stems and foliage. Once a good crop is set, good pickings of ripe fruit are continuous in a large house, of 200 feet in length, such as yours, over several months. For winter fruiting, we should prefer more space between the plants—say in each direction 2½ feet.

TOMATOS: *W. J. B.* The best soil is the pasture loam of which your holding consists; but as the turves will not have decayed much by planting-time, the bed, although chiefly put together of these, should contain available plant-food in the form of garden-mould, or something like it, with some decayed stable-manure added to it. Good varieties of Tomatos for indoor cropping are *Frogmore Selected*, *Duke of York*, *Acme*, *Young's Eclipse*, and *Polegate*. These are early fruiters, and very prolific. We should suppose that the cheapest method of training would be to have sticks of Ash or Chestnut smaller than Hop-poles. Horizontal wires would be more economical in the end, but they would greatly interfere with the performance of the work among the plants.

COMMUNICATIONS RECEIVED.—*W. M.* Auckland, New Zealand.—*T. W. B.*—*C. Strauss*, Washington (next week).—*H. Corvee*, Geneva.—*F. H. Knowlton*, Washington.—*L. Boehmer & Co.*, Yokohama.—*W. J. G.*—*C. W. C.* should have addressed the Publisher.—*B. S.* (letter handed to the Publisher).—*F. B.* (many thanks).—*G. H.*—*H. W. W.*—*D. L.*—*T. C.* (best thanks).—*W. M.*—*H. C.*—*Geneva*.—*J. E. T.*, Scilly.—*Sir W. B.*—*G. F.*—*U. D.*—*Berlin*.—*Dr. Bonavia*.—*E. C.*—*J. H. K.*—*C. L.*, Erfurt.—*F. W. B.*—*R. L. H.*—*Expert*.—*J. B. C.*—*R. D.*—*Wild Rose*.—*C. H.*—*H. H. R.*—*E. C.*—*J. McGlennan*.—*J. W.*, Capron.—*T. Brothers*.

PHOTOGRAPHS, SPECIMENS, ETC., RECEIVED.—*F. W. E.*

(For Markets see p. x.)



THE Gardeners' Chronicle.

SATURDAY, DECEMBER 11, 1897.

THE GREENHOUSE IN THE WINTER.

WHAT a variety of conceptions arise in the mind in speaking of this familiar structure, and how few stop to consider that it is a very modern adjunct to the garden. Sixty years ago the greenhouse existed mostly in the gardens of the aristocracy and in botanic gardens. Public parks had them not, for the simple reason that, with the exception of the Royal parks, which boasted of no glass-houses, no others were in existence to which the public had admission at all times. The modern greenhouse came in with cheap locomotion, cheap glass, cheap wood, and iron, and with the general increase of comfort and the pleasures of life that followed on the introduction of free trade, and the remission of taxes after the great European wars of the early part of the century, with the introduction of steamships and railways, and what is understood by the word Progress. With the cheapening of glass, the old fashion of glazing with small panes of glass disappeared; greenhouses were no longer the half-lighted, leaky structures they had been, and it was now possible to cultivate plants in them with success; and the maintenance of a fairly uniform temperature was possible even in times of severe frost. This was formerly an impossibility, owing to the almost innumerable laps that allowed of the escape of the warmth of the interior from roof and sides. Similarly nearly all glass-houses were, for this reason, constructed as lean-to's, with sheds erected at the back, so as to minimise some of the evils of the necessarily faulty construction. An isolated glass-house was in former days almost unheard of. At about the time of the repeal of the duty on glass, hot water began to make its way as a means of heating, and many were the crude and unsatisfactory methods adopted before our present system of hot water heating was perfected. But before hot water, came hot air, "The Polmaise system." It must suffice to mention its name, for although it made a great stir in the world of horticulture early in the '40's, it really never had any great degree of popularity, and its adoption was limited to a few large gardens. The trade we believe never took it up seriously, and the few market gardeners who practised the little-known art of forcing flowers and fruits stuck with pertinacity to the simple method of heating by means of flues, as did the nurserymen.

By degrees we advanced slowly from the open hot-water trough, which was really a modification of the smoke-flue, and attached to either a fixed or free-standing small boiler by means of a

short length of lead or iron pipe. This method was not bad in its way, but it was extravagant in practice, as each pit or house had its special boiler, and the coal bill was increased accordingly. We recollect seeing a greenhouse in a nobleman's garden, near to, and now incorporated in London, which had an ordinary washing-copper sunk in the floor, and heated by a furnace fixed in the back wall; a couple of siphons connected this with the hot-water pipes. It afforded a handy supply of heated water for use in the greenhouse, and at times a good deal more humidity than the plants required; moreover, the air that got into the pipes, and accumulated at the bends stopped the circulation of the water, and it had to be removed by a specially-contrived air-pump. Gone are the old methods, and we have now as perfect a method of heating as we could desire, and instead of one house one furnace or boiler, we have boilers capable of warming at various degrees fifty to a hundred houses and pits, and needing merely a duplicate boiler attached to the main flow and return-pipes for use in case of very hard weather, or of the failure of one of them; and the necessary valves on the branch flow and return pipes. As with the structure and its heating apparatus, so with the plants grown therein.

The purely cold greenhouse with its stock of hard-wooded plants—the backbone of the contents—the Camellias, Orange and Shaddock trees, *Rhododendron arboreum*, Indian Azaleas, Acacias, Banksia (but few of these now), Polygalas, Myrtles, Eugénias, *Clianthus*, *Neriums*, and other plants, still find, as they deserve, a place in most gardens; but the structure is going, its place being taken by that modern invention, the show-house, conservatory or intermediate-house, as it is indifferently called. This change was inevitable from the immensely greater number of species now called into our service as compared with fifty years ago. Besides, we force a far larger number of species and varieties than we did then; and these plants, in order that they may continue to open their flowers for some time after coming out from the forcing-pit, require to be accommodated in houses furnished with rather more warmth than is desirable in the winter season for those plants above-mentioned, which are then mostly in a state of repose. The part of the year when the warm greenhouse is more particularly grateful is from the beginning of October onwards, as hitherto the temperature has been sufficiently high out-of-doors to render artificial heat scarcely a necessity, and cool and intermediate greenhouse are then interchangeable terms. After that date they are so no longer.

The Chrysanthemum in October becomes the season's flower, and retains its pre-eminence till the fading days of December, reigning, therefore, undisputed queen for two and a half months. Formerly, after the flush of the Chrysanthemums, and these solely consisting of incurved, Pompon, and reflexed varieties, most of which we retain to this day, there was little to enliven the glass-houses, if we except *Salvia splendens*, and the later *S. gesneriflora*, till the earlier Dutch bulbs came in. The Roman Hyacinth was either unknown, or did not exist. *Lilium longiflorum* var. *Harrisii* was not; *Freesia refracta alba* was not much known in gardens before 1878, the year it was Certificated by the Royal Horticultural Society; *Begonia* Mrs. Heal, *B. Adonis* (Veitch, 1887), *B. Gloire de Lorraine* were unheard of. True, we had *B. Froebelli* from Ecuador in 1872. *B. incana*, a species with panicles of small

white flowers, introduced in 1840; *B. incarnata* in 1822, *B. manicata* 1842, and *B. nitida*, one of the best of the winter-flowering species, introduced so long ago as 1777. These, with the garden hybrid, *B. Weltoniensis* (circa 1868), composed all that we had of winter-flowering species in gardens fifty years ago. How great has been the advance in *Begonias* since J. Veitch, J. Laing, Henderson, H. Cannell, Messrs. Sutton, those who are acquainted with modern horticulture know full well; still, the advance is not so marked in winter as summer flowers. *Narcissus* are made to yield their quota to the flowers of winter to an extent not dreamt of in our young days.

The common Lent-Lily, or Daffodil—*Narcissus Pseudo-Narcissus*—a variable plant, and truly indigenous, is one that may be grown in pots and boxes for flowering early, but a few dozen roots should suffice. The true double form of this species, once thought to be lost, and which was re-discovered by Mr. P. Barr, may be preferred by some, but it has less gracefulness than the type. This must not be confused with the common large-flowered double Daffodil, which is of much larger growth, and has great Rose-like blossoms, which botanically is *N. Telamonius plenus*, and not exactly fitted for indoors-gardening.

The *Triandrus* section of *Narcissus* afford some nice forcing varieties in the type in *N. incomparabilis*, *N. odoratus*, and *N. Macleai*. We do not mention the varieties of these, because they are too scarce and dear as yet to be used for forcing.

Narcissus Tazetta in variety, belonging to the *Parvi-coronate*, or small-cupped section, should be included among winter bulbs, especially *jonquilla*. *N. jonquilla*, the Jonquil or Rush Daffodil, should not be forgotten; and for other desirable species for forcing into bloom in the winter, we must ask our readers to consult the nurserymen's bulb-lists.

We can now hardly imagine the show-house without its tree Carnations; and yet how new they are, for there were but few varieties before 1880, and these were *Alegatière*, still accounted of some worth, sent out by C. Turner in 1877, *Empress of Germany* 1872, *Gueldres Rose* 1877, *Maiden's Blush* 1870, probably not grown at this date; *Miss Joliffe*, sent out by Masters in 1871, *Rose Perfection*, *The Queen*, *White Nun*, and a few more. How large a proportion of our present day tree Carnations are quite of recent origin! *Cinerarias*, in recent times, have greatly altered in character, having become of dwarfer stature, broader in the corymb, larger in the individual flowers, with richer and more intense colours, and scarcely recognisable as belonging to the same species as the lanky, small flowered specimens of fifty years ago, that gardeners gave names to and propagated from offsets. Now, the seed of the *Cineraria* can be obtained so true and so good in every way, that the finest varieties can be obtained with much less trouble than was once demanded in the culture of the plants. The only *Cinerarias* which we now distinguish by name are the double-flowered varieties; the earliest of which, in point of time, was *Duke of Cambridge*, sent out by C. Turner, about 1860.

Cyclamens are indispensable in late winter, and, unfortunately for other species, it is only the giganteum varieties of *C. persicum* that meet with the greatest favour, the earliest raised of which was Edmond's giganteum, which has given the name to the strain. This was certificated in 1870, and the next by the same raiser was *roseum compactum* in 1862,

since which time so great a number of *C. p. japonicum* have issued from various nurseries that the maintenance of the name has become a burden; and these, as in the case of the *Cinerea*, *Glaucina*, and *Streptocarpus*, will in time disappear. The *Amaryllis* furnish many beautiful varieties for the winter flora, the bulbs, with special kind of treatment, affording blooms in late January and onwards; and some, like *General Garfield* and *Exquisite*, which originated at the Holloway nurseries of Mr. B. S. Williams, are true winter bloomers. *Kalanchoe carnea*, a Crassulaceous plant, likely to become a favourite flower naturally at this season; it was first seen about ten years ago. *Lachenalias* are favourite winter subjects, good for planting in pots or baskets, through the sides of which they can be made to show their flowers and foliage. *L. Nelsoni* is one of the earliest to flower. And we must not forget *Primula sinensis fimbriata* in all its beautiful varieties of crimson, white, pink, red, light blue, or rather lavender, the spotted, and striped. The old double-flowered *Primula* still remains one of the best of its class.

Bouvardias are to be found in finer varieties than formerly; and the plants still form indispensable warm greenhouse subjects during late autumn and winter.

Manettia micans should be grown in the winter-flower house. It has a neat habit and pretty flowers; and the *Libonias* ought not to be forgotten, being also of neat compact growth, evergreen, and the flowers of a lively scarlet. The brightest of all flowers of comparatively recent introduction are the zonal *Pelargoniums*, the large brilliant coloured blossoms in magnificent trusses imparting a glow to the house to a degree not found in any other plant of the season if we except the Indian *Azaleas*. Our finest zonals go back but little more than twenty years; Pearson's *Lady Belper*, 1876; Constance Grosvenor (Fleming) is older, 1863; but the best of them are much more recent. These zonals are new creations, and our fathers knew them not—at least, in their present state of development.

On this occasion it remains for us to mention but the following as true winter subjects, or which may be forced into bloom at this season. The beautiful, if somewhat formal, *Camellia*, a plant that is relegated too much to the rear, considering its great merits and the ease with which it can be cultivated and flowered; early-flowering *Gladolus*, as *The Bride*, and *Colvillei*; and various hardwood plants, as *Epacris*, in variety, *Ericas*, like *Wilmoreana*, *E. hyemalis*, Indian *Azaleas*, *A. mollis*, *A. rustica*, and the Ghent varieties; *Rhododendron hybridum*, *Kalmias*; and among deciduous subjects, *Lilacs*, *Prunus triloba*, *Spiræa astilboides*, *S. japonica*, *S. confusa*, *Deutzia gracilis*, *Staphylea colchica*, &c.

NEW OR NOTEWORTHY PLANTS.

IPOMCEA PERRINGIANA, Dammer, nov. spec.

THIS new *Ipomoea* was introduced from the Cameroons by the late Johannes Braun, son of Alexander Braun, and a plant of it flowered the first time last summer in the Victoria-house of the Berlin Botanic Garden. It is a large climber, with slender stems, only one line in diameter, and covered with stellate hairs. The discoloured leaves are disposed at intervals of 4 to 5 inches, petiolate, broadly ovate, three to five lobed at the base, cuneate; the lobes are obtuse mucronate. Length of the petiole 2½ inches; the lamina is 4 to 5 inches long, 4½ to 6½ inches broad. The inflorescence is pedunculated, peduncle 6 inches long, cymose, bracts linear, deciduous, 1½ line

long, ½ to ¾ a line broad; pedicels ½ inch long thickened at the upper end, shining. Stems, leaves, and peduncle beset with stellate hairs. Of the obovate obtuse calyx leaves, the outer ones (4 lines long) only have some stellate hairs, the inner ones 5 lines long, 2½ lines broad, are glabrous. The violet-rosea hypocrateriform corolla is over 3 inches long; the corolla-tube is contracted at the base, red on the interior surface, 2 inches long, and ½ inch in diameter; the five-lobed limb is 2 inches in diameter, the lobes are roundish, somewhat crenate-toothed; the five inæquilong stamens are inserted in the corolla ½ inch over the base, which is here thickened. From the white, at the base, hairy filaments, one is 1 inch, one ½ inch long, the three others are still 2 lines shorter; anthers 2½ lines long, sagittate, white exteriors; disc very short, five-toothed; ovary conic, 1 line high; style filiform, 1 inch long; stigmata globular, confluent. The plant flowered from August till the middle of October. *U. D.*

COCHLIGDA STRICTA, Cogn., n. sp.*

We have seen this species at Liège, in the collection of M. De Laireesse, nurseryman, with whom it bloomed last August. It was sent from Columbia by M. Lehmann, mixed with *Odontoglossum cirrosum*, which its pseudo-bulbs much resemble. In its beautiful rose-coloured flowers it is analogous to *C. rosea*, but differs much, chiefly in the following particulars:—Its pseudo-bulbs, of a bronzy-green, are thicker, the angles obtuse, only becoming acute towards the summit; the leaves, still very imperfectly developed, seem narrower and sharper; the common peduncle instead of being curved, is stiff and erect; the flowers are rather smaller, and more attractive, quite erect, and distinct, with much longer pedicels; the sepals and petals are shorter, broader, and less pointed; the lateral ones attached between them at least for two-thirds of their length, and not merely near their base; the lip is more fully joined to the column, shorter and broader, less distinctly lobed, the terminal lobe broadly triangular-ovate and spreading, instead of being oblong and bent back. *A. Cogniaux.*

JAMES BATEMAN.

YOUR just tribute to the memory of the dear old horticultural enthusiast, the late Mr. Jas. Bateman, calls to my mind many pleasant remembrances of that remarkable man. I paid him a visit at his pretty home at Worthing in 1894, and although his garden there consisted principally of natural-looking rockeries, formed chiefly by his own hands, and in which were planted a great number of rare plants, the day seemed too short to admit of even a tithe of its interesting subjects being inspected, so much had their loving owner to say about each. Naturally, the subject of *Orchids* was touched upon, and on my saying that a brief note of his first attempts at *Orchid* importing, happening, as it did, at a very important period in *Orchid* culture, would be interesting to many, Mr. Bateman promised to send me some notes on the subject, and strangely enough I turned to his letter again just before I heard of his death.

As I had Mr. Bateman's authority to make what use I liked of his letter, I here give it:—"It has been a great pleasure to me to revive memories of my first experience in *Orchid* importing. About the beginning of 1882 I sent (with my father's permission)

* *Cochlidia stricta*, Cogn.—Pseudobulbis late ovatis, satia compressis, angulis superne acutis ceteris obtusis; foliis angustis, acutissimis; pedunculo communi erecto, stricto, gracili, fere usque ad basin laxo multifloro; bracteis tenuiter membranaceis, basi vaginantibus, deinde triangularibus, acuminiatis, arcte adpressis; floribus erectis, distinctis, longe pedicellatis, pedicellis strictis; sepalis æquilongis, carnosulis, obovatis, apice subtruncatis apiculatisque, dorsali erecto apice leviter recurvo, laterali patulis usque ad ½ inter se coalitis; petalis erectis, obovato-ellipticis, abrupte acutis, basi cum columna breviter coalitis, sepalis dorsali æquilongis; labello connato, patentissimo, sepalis lateraliibus satia brevioribus, late ovatis, acutis, leviter vel obscure trilobatis, disco basi tuberculis 2 crassis laterali valde compressis munito; columna breviuscula, fere usque ad apicem cum labello connata, clinandrio margine antice utrinque anguste undulato. Crescit in Columbia.

a man of the name of Colley to collect *Orchids* in Demerara. He was under the protection of the two great Liverpool merchants, Moss and Horsfall, on whom he was authorised to draw up to the extent of £200 or £300. Colley did his best, and found abundance of *Orchids*, i.e., of *Catasetum* and yellow-flowered *Oncidium*s, which then were not worth their freight. The only new plant worthy of cultivation was a species of *Rodriguezia* or *Burlingtonia*, with large white flowers, which flowered beautifully and then died. There is a beautiful white *Catasetum* in the Demerara woods, but Colley was not fortunate enough to meet with it; indeed, it has not been found until a very recent period. All this reads like a very poor speculation, but that was not the case. You have heard, no doubt, of *Oncidium Lanceanum*, which Lance discovered in Surinam, a year or two before Colley went to Demerara. He (Lance) only sent over two or three plants to England, which made *Orchid* collectors mad. It had never been found in Demerara, but Colley stumbled upon a solitary tree (about five days' sail up the Demerara river) covered from head to foot with this *Oncidium*. He immediately set to work and stripped the tree, determined not to give others the chance! Nor, so far as I know, has the species ever been found, before or since, in that colony. Any how, it retrieved the fortunes of my expedition, for when a large healthy cargo was known to have arrived, everyone (save the fortunate holder of Mr. Lance's specimens) were prepared to go down on their knees for a bit, offering their greatest treasures in exchange. In this way (without any money passing) I became possessed of bits of all the then-known species, which I cared to have.

"But for this unexpected 'find,' my expedition would have been a total loss and bitter vexation.

"We did not then know that good *Orchids* are, as a rule, very rarely met with on the beautiful, tidal, tropical rivers, but must be sought on the nearest mountains at an elevation of 3000 to 6000 feet.

"One treasure I should like to see again, viz. 'Cassaripe,' genuine, and compounded by the Indians from Cassava. It was delicious, and the half-a-dozen bottles which Colley brought lasted several years. You may buy stuff here by the same name, but it is mainly made up of treacle."

From this interesting letter we get a glimpse of the enthusiast as he was in his declining days, but still retaining his fine intellect, and that pleasant way of putting things, which formed a great feature in his lectures at the Royal Horticultural Society.

With regard to *Oncidium Lanceanum*, it may be said that Mr. Jemman and others have since found it in British Guiana. I am pleased to be able to add, that through the kindness of Everard F. Im Thurn, Esq., of British Guiana, I was enabled to forward the wished-for supply of genuine *Cassaripe*, which gave great satisfaction. *James O'Brien.*

PLANT NOTES.

PINGUICULA CAUDATA.

DURING the month of November this beautiful Mexican species was to be seen in fine character in Mr. James Cypher's nursery, Queen's Road, Cheltenham. Quite a large batch of plants was observed in 8½-inch pots, blooming freely. One blossom at the termination of each long scape; in colour bright deep rosy-carmine or crimson. The leaves are formed in dense rosettes, long, narrowish, and of a pale yellowish-green colour. An individual plant produces a large number of flowers, thrown well above the foliage, and they appear to be somewhat lasting in character. So attractive are they from their peculiar colour, that they at once attract attention on entering the house.

P. caudata, which is a greenhouse evergreen perennial, is potted into a compost of peat, sand, and sphagnum moss in equal parts; the potting process is lightly done, the time of potting is after the plants have bloomed and been rested for a period, during which they require little water. As soon as they begin to show signs of growth they require more water, and then comes the time to divide. They do well in a temperature suitable for cool *Orchids*—about 45° to

50° by night during winter, and it is necessary there be plenty of moisture in the atmosphere both winter and summer. In addition to increasing by division, plants can also be raised from leaves (similar to the *Gloxinia*), and they are found to strike freely in the same compost as that recommended for growing plants. Plants can also be raised from seeds. Could a batch of the finely-grown and bloomed plants seen at Cheltenham have been sent up to one of the meetings of the Royal Horticultural Society during the autumn, they would have been certain to have aroused a great deal of interest. The species was introduced from Mexico in 1881. *R. D.*

TREES AND SHRUBS.

CASTANOPSIS CHRYSOPHYLLA.

IN December, 1882, a notice of *Castanopsis chrysophylla*, planted at Tortworth, was sent to the *Gard. Chron.* Since that date, the tree then alluded to has grown considerably. As it is far from common (fig. 120), and as it is sometimes supposed to be not hardy, a description of its present condition may be of interest to some of your readers. This plant was procured from Messrs. Veitch about 1854—56. On applying lately to them for a precise date, they were

and many healthy plants have been reared in spite of a considerable mortality during the first three years after germination. Several healthy specimens over 6 feet high have been planted out in the neighbourhood of the parent tree, or have been distributed among friends. One of these in the grounds of Sir Joseph Hooker at Sunningdale is now 10 feet high.

The experience of forty years has shown that *Castanea chrysophylla* is hardy here. It stands on a hill-side of old red sandstone on a southern slope of sand and loam, sheltered from the north and east by rising ground, and protected against the prevailing south-west wind by a grove of larger trees.



FIG. 120.—*CASTANOPSIS CHRYSOPHYLLA*—HARDY TREE: FLOWERS AND FRUITS.

(From a specimen sent by the Earl of Ducie.)

CYCAS REVOLUTA.

At Northdown House there is a large plant of *Cycas revoluta* bearing a cone. The same plant some eight or ten years ago produced a cone. It may not be unusual for the *Cycas* to bear fruit, but there are many who have never had an opportunity of seeing one, and to those it might be of interest to know that the plant produces a large tuft; the one I am referring to measures 46 inches round and 28 inches over, in the centre of the crown of leaves surmounting the stem. This tuft consists of woolly, pinnately-cleft leaves, studded with red fruits about the size of small nuts on either side of the edges, which are in the notches. The exact age of this plant is not known, but I should imagine it is quite forty years old. *H. Markham, Northdown, Margate.*

unable to trace it; they think, however, that their collector, Lobb, may have sent its seeds to them about 1853. In the winter of 1879 it was 20 feet high, with a girth of 17 inches at 3 feet from the ground. At the present moment it is 27 feet high, with a girth of 36½ inches at 3 feet from the ground. The increase in diameter at this point is, therefore, about one-third of an inch annually. The first branch is at 6 feet from the ground. The tree is in perfect health, and seems to be free from all insect enemies. Up to 1882 it bore sterile "burs," miniatures of those of *Castanea vesca*; but since that date it has produced good seed. About half a pint of these small Chestnuts, each no bigger than a small Pea, has been collected every autumn,

Before the publication of vol. ix. of *The North American Sylva*, by Professor Sargent in 1896, the references to this tree in botanical works were meagre and incomplete. Professor Sargent describes it as follows:—"A tree from 100 to 150 feet in height, with a massive trunk from 5 to 10 feet in diameter, and frequently free of branches for 80 feet above-ground. . . . A small tree in Oregon and on the Californian sierras, and usually shrubby at high elevations and on the Californian coast ranges south of the Bay of San Francisco. The Golden leaved Chestnut attains its greatest size and beauty in the humid climate of the coast valleys of Northern California, where, scattered among coniferous trees, it is one of the noblest and most beautiful inhabitants of the

forest, with its fluted columnar trunk and brilliant leaves, bright green and lustrous on the upper surface, and golden-yellow on the lower."

This golden-yellow colour on the lower-side of the leaves becomes very conspicuous when the branches are moved by the wind. Although the Tortworth specimen is never likely to attain the size recorded by Professor Sargent, its present healthy condition and uninterrupted growth seem to promise a tree of the fourth or fifth magnitude in the course of the next half-century.

In his description of the genus, Professor Sargent writes:—"Of *Castanopsis*, which is intermediate in its character between the Oak and the Chestnut, about twenty-five species are now recognised; one inhabits the forests of Pacific North America, and the others South Eastern Asia, where they are distributed from Southern China through Malaya to the Eastern Himalayas." In all the species the leaves are persistent. It is a pleasure to me to have found a record of Dr. Asa Gray having examined my tree when on a visit here, January 11, 1881. *Ducie, Tortworth, Gloucestershire, November 12.*

COTONEASTER PANNOSA.

In the October number of the *Journal de la Société Nationale d'Horticulture*, M. Maxime Cornu is reported to have shown before the Society a specimen of this shrub, discovered by the Abbé Delavay in Yunnan. The leaves are small, and covered on the under-surface with a whitish down; whilst the berries are globose, of the size of Peas, and produce a good decorative effect.

ORCHID NOTES AND GLEANINGS.

LÆLIA PUMILA PRÆSTANS.

SOME collections of Orchids have been embellished during the past season with the best varieties of *Lælia pumila* hitherto observed, which are of recent importation. The name "præstans" is generally admitted to be untenable as that of a species, though the original form of *L. pumila* described as *L. præstans* had some distinct features which are well set forth by Messrs. Veitch in their *Manual of Orchidaceous Plants*: "Lip trumpet-shaped and not straight as in the type, convolute side-lobes overlapping at the margin, very stiff in texture, so that they cannot be spread out without splitting; lines of the disc almost obsolete, disc orange-yellow." A flower exactly answering to this description, and differing from the bulk of *L. pumila* observed in gardens, is sent by G. F. Moore, Esq., Bourton-on-the-Water.

LÆLIA × JUVENILIS (PERRINII × PUMILA).

All of the hybrids of *Lælia Perrinii* are desirable on account of their showy flowers, appearing chiefly in the autumn and winter; and in the present instance, the beauty of the flower is enhanced by its being produced on a neat, compact-growing plant. A good example is sent by Messrs. J. Charlesworth & Co., Heaton, Bradford, with the remark that they regard it as one of the handsomest dwarf hybrid *Lælias* flowering at this season. The flower, which is about 5½ inches in width, has bright purplish-rose coloured sepals and petals, which are silvery-white at the base. The lip is bluish-white at the base, and maroon-purple in front, the margin being slightly crimped.

CYPRIPEDIUM GODEFROYÆ LEUCOCYLUM.

A good variety of this rare *Cypripedium* was illustrated from the collection of E. I. Measures, Esq., in the *Gardeners' Chronicle*, June 30, 1894, the flower having a cream-white ground colour, heavily blotched with purple, its general appearance being nearer to *C. bellatulum* than to *C. Godefroyæ*, from both of which it is distinguished by its unspotted lip. A handsome and novel form is now sent by G. F. Moore, Esq., Chardwar, Bourton-on-the-Water, in which the ground colour of the flower is pale yellow. It is a very large flower, and the heavy claret-purple markings contrast strikingly with the large labellum, which is unspotted on the exterior, but beautifully marked with purple dots inside.

ODONTOGLOSSUM DUVIVIERIANUM ×.

This remarkable and pretty natural hybrid, which is generally regarded as the progeny of *O. nebulosum* and *O. maculatum*, was first flowered by M. De Smet-Duvivier, Ghent, who sent it to Reichenbach in 1888. In his description, the Professor sums up by remarking, "It is a beauty;" and the expression regarding it has doubtless been often repeated by others—not that it is so showy as some of the other *Odontoglossums*, but it is pretty in form, and novel in colouring. The ground of the flower is white, as in *O. nebulosum*, which it much resembles in the form of the lip; the sepals and petals have a lemon-yellow tinge, and bright cinnamon-brown blotches on the inner halves. The lip is white, with cinnamon-brown base and marginal spots. It was well figured in the *Lindensia*, v. p. 55, and a plant is now in flower with Messrs. J. Charlesworth & Co., Heaton, Bradford, Yorks.

LÆLIA RUBESCENS, syn. L. ACUMINATA.

This is a plant of small growth, not much seen in collections, although at this season its flowers are very attractive. It is said to be somewhat scarce in Mexico and Guatemala, from which it was introduced in 1840. The pseudo-bulbs are ovoid, and have a shining appearance, with a short leathery leaf at the apex. The flowers are borne on slender scapes about 1 foot long, which spring from the apex of the pseudo-bulb. At Edinburgh the flowers are almost white, with a blotch of maroon colour in the throat of the lip. The colour of the sepals and petals is said to vary. The plant does best under Cattleya-house conditions. *R. L. H.*

ORCHID PORTRAITS.

CATASETUM BUNGEROTHI, N. E. Br., and var. aurantiacum, Cogniaux, *Dict. Icon. Orchid.*, Catasetum; var. imperiale, Cogniaux, l. c. t. 1.

CATTLEYA MENDELI var. KROELJANI, *Lindensia*, t. DLXXXIX. A pure white form, with a shade of yellow near the base of the lip.

CERCOGYNUS FULIGINOSA, Lindley, Cogniaux, *Dict. Icon. Orchid.*, *Cologne*, t. 2.

CYMBIDIUM GIGANTEUM, Wallich, Cogniaux, *Dict. Icon. Orchid.*, *Cymbidium*, t. 3.

DENDROBIUM DALHOUSIAE, Wallich, Cogniaux, *Dict. Icon. Orchid.*, *Dendrobium*, t. 7.

EPIDENDRUM PSEUD-EPIDENDRUM, Rehb. f., Cogniaux, *Dict. Icon. Orchid.*, *Epidendrum*, t. 4.

EPHIPPONITIS VEITCHII ×, Cogniaux, *Dict. Icon. Orchid.*, *Ephipponia*, t. 1. EPIDENDRUM RADICANS × × EPHIPPONITIS COCCINEA ? Botanical characters, those of *Epidendrum*.

LÆLIO-CATTLEYA HIPPOLYTA, *Lindensia*, t. DXCL. A hybrid between *Lælia cinnabarina* and *Cattleya Mossii*.

LÆLIA CRISPA, Rehb. f., Cogniaux, *Dict. Icon. Orchid.*, *Lælia*, t. 11.

LYCASTE TRICOLOR, Klotsch, Cogniaux, *Dict.*, *Lycaste*, t. 5.

MASDEVALLIA VEITCHIANA and var. GRANDIFLORA, Cogniaux, *Dict. Icon. Orchid.*, *Masdevallia*, t. 4.

MILTONIA BLUNTII, Rehb. f., Cogniaux, *Dict. Icon. Orchid.*, *Miltonia*, hybrid, t. 2.

MILTONIA VEXILLARIA var. KIRSTENIÆ, *Lindensia*, t. DLXXXVIII.

ODONTOGLOSSUM ADRIANÆ ×, L. Lind., *Lindensia*, t. DXC. A hybrid between *O. crispum* and *O. Hinzewallianum*; segments broad, whitish, thickly spotted with purple; lip oblong, pointed.

ODONTOGLOSSUM DEL TECTO ×, L. Linden, *Lindensia*, t. DLXXXVI. A supposed hybrid between *O. crispum* and *O. crispum* or *O. Ruckertianum*. Flowers stellate, flat; segments narrow, rosy with deep crimson spots; lip whitish, anterior lobe narrow. Name in compliment to M. Paul du Toit.

ODONTOGLOSSUM HARRYANUM, Rehb. f., Cogniaux, *Dict. Icon. Orchid.*, *Odontoglossum*, t. 11.

OXIDIPLOM ZEBRINUM, Rehb. f., Cogniaux, *Dict. Icon. Orchid.*, *Oncidium*, t. 9.

SOBRALIA LINDENI, *Lindensia*, t. DLXXXV.; *Gard. Chron.*, 1895, p. 860. Sepals and petals white; lip white with radiating crimson lines, fringed at the margin.

VANDA ANGSA ×, O'Brien. A cross probably between *V. Roxburghii* and *V. coerulea*; *Lindensia*, t. DXCL.

VANDA SUAVIS MAGNIFICENS, *Lindensia*, t. DLXXXVII.

DISEASE IN JAPANESE LILIES.

"LOVERS of the beautiful Japan Lily have, probably, been alarmed by the news that its existence was threatened by a novel and destructive disease, a description of which is given in the current number of the *Kew Bulletin*. Fortunately, however, says an Exchange, with the account of the bane, comes the discovery of an antidote.

"The disease appears to have developed with astonishing rapidity. It was practically unknown two years ago; but the crop of bulbs raised last year in Japan for exportation to Europe was almost

entirely ruined by it. The attention of the authorities at Kew was drawn to the matter by a London firm, who forwarded to them, for examination, a large number of the diseased bulbs. Out of 73,000 bulbs of *Lilium speciosum* sent to them from Japan, only 250 were fit for sale when they arrived in England. Nor was this all, for out of a consignment of *Lilium auratum* received at a later date, amounting to nearly 40,000, only about one-tenth was unspoiled. The disease is a peculiar form of fungus. The experts have found that short immersion in a 1 per cent. solution of corrosive sublimate, or of salicylic acid, is fatal to *Rhizopus necans*, as this pest is called. The growers of these beautiful flowers in Japan will do well to abandon the infected grounds, and to adopt this simple precaution. From the 'Daily Advertiser,' Yokohama, Japan."

My attention having been drawn to the above cited article, I should like to say a few words regarding this fungus, *Rhizopus necans*, based simply on experiments and experiences gone through during the time that I have been connected with the firm of L. Boehmer & Co. in Yokohama, the oldest nursery firm as exporters of Japan Lilies in this country. It has happened not only lately, but as long as Lily bulbs have been exported, that the results have been sometimes very disheartening for the consignees as well as for the shippers, but of losses like those in the article above referred to I have never heard. I imagine that the great loss is probably the result of some Japanese or other speculators, who, in order to obtain the best prices, have shipped the bulbs at the wrong season.

The climate of Japan is such, that during and after the hot and sultry summer months—July, August, and September, during which we have a temperature of from 85° to 95° Fahr., the rainy season sets in, which produces a real hothouse temperature, the air being saturated with moisture, which is splendid for growing, but not for harvesting field products. The moisture is so great that not only out-of-door things get affected by fungus formations, but even in our houses clothes, boots, shoes, &c., in short, everything which is not in daily use becomes covered with mould.

It is, therefore, easily imaginable that during such a season, bulbs taken out of the field not perfectly ripened, packed into boxes, shipped through the tropics to Europe, may be affected by fungus formations which have, during a two months' voyage on board a steamer, sometimes close to the boilers or some heat-producing cargo, sufficient time to do their deadly work. The danger would not be so great if the bulbs could be brought direct from the fields into the boxes. This seems, however, impossible. Even with the greatest care, with such tender articles, a few bruises, and a little injury to their scales are unavoidable. These generally favour the growth of the fungus formations, which very soon take hold of the whole bulb. After this sultry weather, the autumn season sets in during October, with fine, dry days, warm during day-time, but brisk and refreshing during the night.

The earth gets dried, and the season for harvesting arrives. The Lily bulbs are now perfectly ripe, in a dormant state, and in a proper stage for export. The weather being then dry and cool, any bruises the bulbs may receive during the handling will dry off and heal quickly and satisfactorily. There are also a few very tender varieties, which even the most careful treatment will not protect against the hardships of a long voyage through such different climates as the route by India, the Red Sea, and the Suez Canal offer.

I recommend the following remedy:—1st, place your order with some respectable firm, which knows its business; 2nd, do not give instructions, if possible, regarding the time for shipment, but leave this to the shippers, who will know the best time the bulbs are ripe, and the best time for packing and shipping; 3rd, try to induce the steamship owners on the Eastern lines to provide a few steamers during the principal export season with cold storage arrangements, to get the shipments through the trials of change of climate. *A. Unger (L. Boehmer & Co.), 5 and 28, Bluff, Yokohama.*

NÆGELIA AMABILIS.

SOME short time since, Mr. P. Blair, of Trentham, exhibited a fine batch of these plants at the Royal Horticultural Society, from one of which our illustration (fig. 121) was taken. The plant was originally

in April and May, in a temperature of 65°. When the pots are filled with roots, shift them into 5 and 6-inch pots, in a compost of loam, leaf-mould, and sand, in equal parts; a little peat may also be added. After the plants get well established, have them put into an intermediate-house; shade from the sun, and

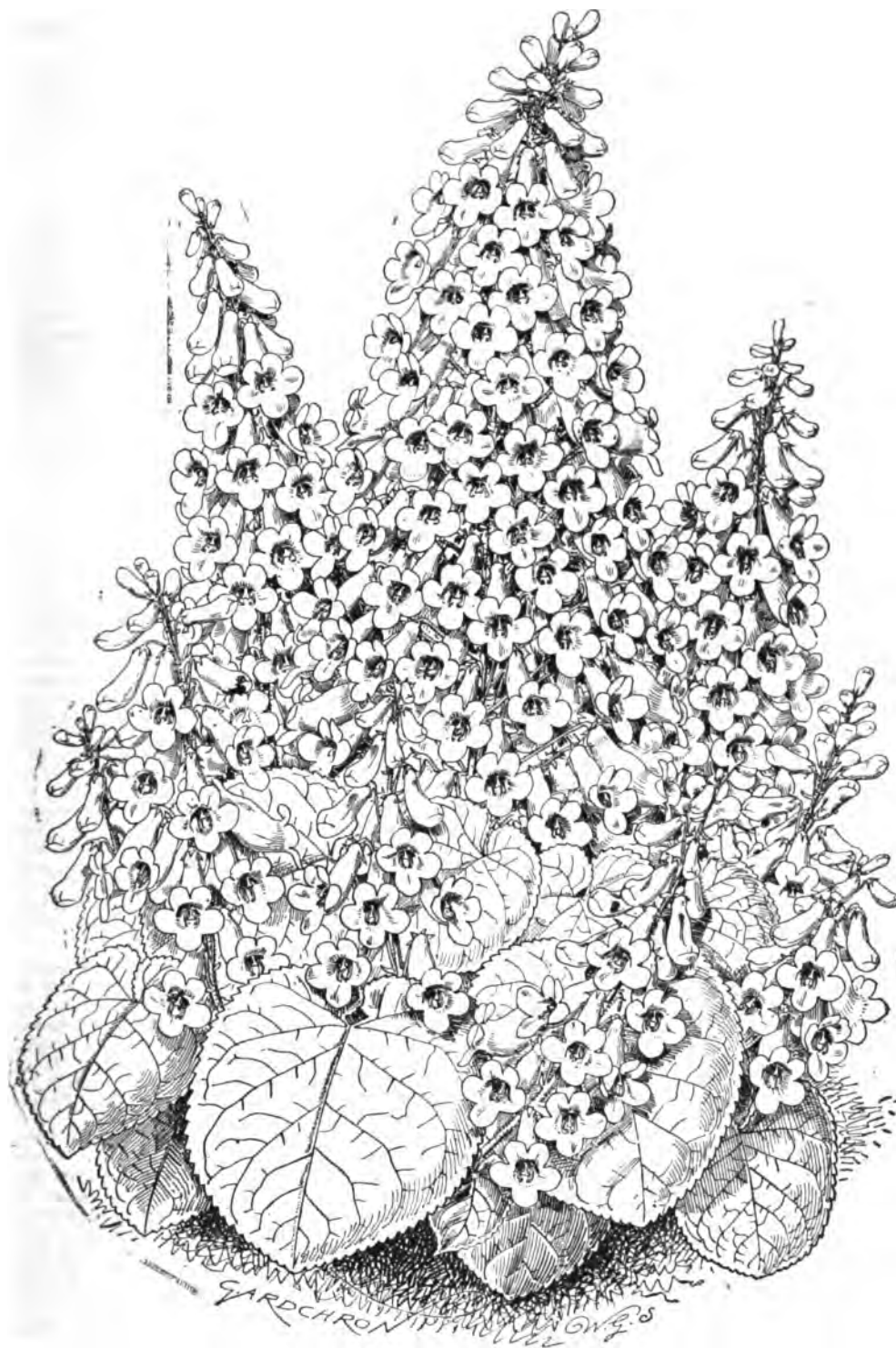


FIG. 121.—NÆGELIA AMABILIS: FLOWERS CREAMY-WHITE.
(Reduced One-half.)

figured by Decaisne in the *Flore des Serres*, xii, p. 21 (1857), and afterwards in the *Bot. Mag.*, t. 5088, under the name *N. multiflora*. The plants lately exhibited were so beautiful, and so well cultivated, that we asked Mr. Blair to furnish us with some particulars, which he has had the kindness to do:—

"The corms are started in batches in 3-inch pots

air freely on fine days, but avoid draughts. When the flower-spikes appear, a little stimulant can be given; they commence to bloom early in September, and continue until the end of November, many of the plants carrying from twenty to thirty spikes of flower. After flowering is over, they can be stored away in a warm dry place until started again in spring. P. B."

BERLIN.

ENGLISH PRIMULA SINENSIS FIMBRIATA AT BERLIN.

It may be an interesting fact to the readers of the *Gardeners' Chronicle* to learn that the large-flowered varieties of *Primula sinensis fimbriata* are finding their way more and more into the Berlin nurseries. They fetch prices three to four times higher than the common German varieties, viz., 6s. to 7s. 6d. the dozen, against 1s. 6d. to 2s. 6d. Mr. Kretschmann, Pankow, Berlin, is a specialist in Primulas, who raises yearly 300,000 to 500,000 seedlings, and he says, that still the demand is greater than he can meet. It is quite true that these fine varieties are as easily cultivated as the common ones, and they will in time oust them out of cultivation. Contrariwise to the English fashion, these large-flowered varieties have no names, they are only designated by terms, as white, large white, red, rose, blue, &c. Dr. Dammer, Gross Lichterfelde, Berlin.

ANANAS NERVOSA MAXIMA.

This is a Pine-apple of enormous size, and very fine flavour. At a recent meeting of the Berlin Horticultural Society, Herr Gartenbau-director Hampel Koppitz exhibited a fruit which had a weight of 4 kilogrammes 125 grammes, or a little more than 9 lb.

CHRYSANTHEMUMS AT BERLIN.

On the occasion of the last meeting of the Berlin Horticultural Society, Herr Garten-inspector Weber, Spindlersfeld, Berlin, exhibited a collection of twenty-

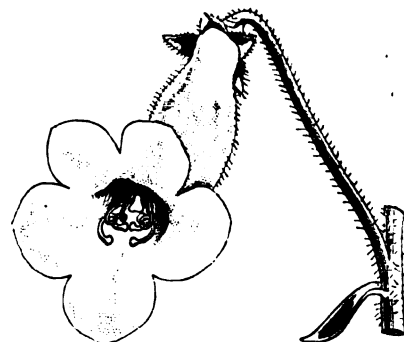


FIG. 122.—FLOWER OF NÆGELIA AMABILIS.
(Natural Size.)

six Chrysanthemums, which showed that the cultivation of these plants is now well understood at Berlin. The finest variety was the white Tangarita, seeds of which were imported directly from Japan by Hofmarschall von Saint-Paul. This is indeed a very noble flower, of fine build, and of the purest white. I am astonished not to find this variety amongst those exhibited at the National Chrysanthemum Society's Show in the Royal Aquarium. Certainly it is a variety that would make its way in England. Medium-sized flowers are 8 inches in diameter, but some of the flowers exceed 9 inches. It would be interesting to learn of what dimensions this variety could be grown by English specialists. The other varieties which Mr. Weber exhibited are well known in England, a good many having been exhibited at the Royal Aquarium. The varieties were—Le Colosse grenoblois, Hairy Wonder, Melusine, Beauty of Truro, M. Ch. Molin, James Bidscope, Directeur Tisserand, Madame Carnot, Arona, Australian Gold, Th. Denis, Charles H. Curtis, Mrs. H. Kloss, Le Dac, Bellem, Niveum, Waban, John Seward, Sonne von Blankenburg (a very fine golden-yellow, very large variety), George W. Childs, Good Gracious, F. W. McHattie, Hallow E'en, John Machar, Mrs. H. Weeks. Only two of these reached the dimensions of Tangarita, namely, Sonne von Blankenburg and Hallow E'en. Dr. Dammer, Gross Lichterfelde, Berlin.

wadding, over which these pests can seldom pass. In consequence of the need of increased artificial heat in the warmer divisions, the voracious cockroach will become more troublesome. After cleaning the houses, and the plants are put straight, it will be necessary to remove any accumulation of rubbish from under the stages, empty pots, &c., or these insects will avail themselves of the protection afforded. All dry corners in the houses should be kept thoroughly moist, as in such places they congregate and multiply. Cockroaches are particularly fond of the roots of *Aërides*, *Vandas*, *Saccolabium*, *Phalenopsis*, *Lælia*, *Cattleyas*, also the young leaves of some *Dendrobiums*; therefore these particular species should be examined with more than ordinary vigilance. Make use of beetle poisons, of which two or three excellent kinds are to be obtained; but it is not advisable to lay down the same kind of poison on each consecutive night, but occasionally to substitute one kind for another.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, late of Eastnor Castle, Ledbury.

The Fig-house.—The trees, if started early last month, will now be pushing their buds, and should be afforded a slightly higher degree of warmth, say, 55° at night, with a corresponding increase by day. If the Fig-trees are grown in pots or tubs, let the heat of the bed they are plunged in be kept steady at 78°, adding prepared fermenting leaves and stable-litter if the heat be declining. As the buds develop, the amount of the syringing may be lessened. The state of the soil as regards moisture must have close attention, enough being afforded to the trees in pots and borders as will maintain healthy growth; the borders, more especially, if made of proper materials, taking large quantities of water. Any neglect in this particular will be very apt to cause the young Figs to drop off at a later date. The water employed should be of 80° to 85° of warmth.

Intermediate and Late-houses.—In the succession Fig-house pruning and clearing should now be finished. The chief points to be observed in pruning are to remove all of the weakest shoots, the injured or immature points, and to reserve only such shoots as possess strong, well-ripened points, and when securing the trees to the trellis, to take care that these bearing shoots are evenly distributed, otherwise much foliage will appear in some places and only bare patches in others. Keep the late Fig-house cool, short of admitting frost, and do not let the borders get excessively dry, which is apt to occur when a border is shallow or small, for although the Fig when resting requires to be kept dryer than any other kind of fruit, dryness should not be carried to extremes. Should any tree be making very gross shoots, if it be a young one, dig up the roots carefully, and replant it in the same or another place, first looking to the drainage of the border and ascertaining that no means of escape for the roots exist, as these will get through the smallest crack, causing a lot of trouble in remedying the mischief caused by roots obtaining access to rich soil beyond the border. Let the drainage materials be topped with turves, grassy side downwards, on which place some of the compost, consisting of friable loam three-quarters, and one-quarter of old mortar, brick-bats, or pieces of sandstone. Having placed the tree in its right position, proceed to spread out the roots in a suitable manner, at two or three different levels, covering them up as the work proceeds, and when the hole is filled, afford a mulch of long litter, and in a few days a moderate amount of water to settle the whole. In the case of old trees, which it would scarcely be advisable to treat in the above described manner, simple root-pruning must be resorted to, proceeding in the usual manner of root-pruning at some distance from the stem, and working towards it as close as may be advisable, and if possible cutting through all downward trending roots under the centre of the tree. Having laid all the roots bare up to a certain point, shorten the stronger ones and those that are damaged, and replant in new compost, and mulch and afford water as in the other case. No manure should be mixed in the soil; but the trees should receive liquid-manure when carrying heavy crops, the chief difficulty with young trees being to check the strong wood that is usually produced.

PLANTS UNDER GLASS.

By G. H. MAVOOCK, Gardener, Luton Hoe Park, Luton.

Hippeastrums.—Where early flowering is desirable, a number of bulbs may now be started, a selection being made of the best matured ones, that is those

that have been rested for the longest period of time. The temperature to which the bulbs may be subjected may range from 50° by night to 55° by day, which will be found suitable for the first month. The bulbs should be lightly syringed once daily in the forenoon, and but little water afforded the soil before the flower-scape commences to grow. Bottom-heat of 75° will help the growth considerably, but it is not essential.

Cyclamens.—Much care is demanded in affording water to these plants, especially in moist weather, and rather more warmth is required than that of the cold greenhouse. The pots should be stood upon a layer of fine gravel or spar, and if this be covered with wood-moss it will have a nice effect. If hot-water pipes exist under the staging, some amount of damping of the gravel and moss will be necessary at times, the moss serving the purpose of maintaining moisture-laden air about the plants, which is very favourable to their well-being.

Bouvardias.—Some of the earliest to flower having now ceased to be of decorative value, may be removed from the flower-house, being replaced with others of the same genus, or with diverse subjects. The *Bouvardias* that are removed should be kept rather dry at the root for ten days, and at the expiration of that time they may have the shoots that have flowered cut back for two-thirds of their length, and be fumigated or vapourised should aphides be present on the shoots, which is almost sure to be the case.

General Work.—Any plants of herbaceous *Calceolarias* that still remain in 60's should be re-potted into pots of 5 or 6 inches in diameter, and then removed from the pit or frame in which they may hitherto have been standing to a greenhouse. Green-fly being very apt to infest these plants, a sharp outlook must be kept for them, as it is impossible to kill the insects if present in large numbers on the crinkled undersides of the hairy leaves. *Brugmansias sanguinea* should be removed to some little-used greenhouse, and be cut hard back when the soil at the roots has become dry. This applies to plants in tubs and pots, but those that are growing in the borders of the conservatory being probably still green and fresh-looking, may wait a little longer before they are similarly pruned. Although I have named *sanguinea*, the single and double-flowered white *Brugmansias* require the same kind of treatment.

Lilium longiflorum Harrisii.—The first batch of these bulbs will be benefited by weak doses of farm-yard manure-water, and by being frequently fumigated. When any of the roots appear at the surface, as will generally occur, a top-dressing should be afforded of loam, peat, and rotten manure in a lumpy, rough condition, and any later surfacing may be done with common wood-moss. Any plants of *Eucharis* which may be passing out of bloom should be sponged and cleaned and placed in a house having a temperature at night of 65° till they cease to grow, supplying them occasionally with liquid-manure for a period of about six weeks.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Pruning Standard, Pyramid, and Bush Trees of Apples and Pears.—Upon the manner in which this simple though important operation is carried out depends almost entirely the building up of fruitful, and consequently profitable specimens, whether they be standards, pyramids, bushes, or espaliers. However, it would be better to let the trees go unpruned than to trust an unskilful man with the pruning—that is, to allow a man having no clear object in view in operating on young, or maiden trees. The formation of large fruit-bearing trees, of whatever kind, in as short a time as possible, is the wish of all who possess fruit-trees; therefore, the young leading shoots of standard, pyramid trees and bushes should be pruned back to within from 5 to 9 inches, each of these pruned-back shoots will produce from three to five growths next spring. These—assuming that we have last year's cut-back maiden-trees to deal with now—where likely to become crowded, or to cross each other in growth, should be cut back to within 2 inches of last year's wood; cutting back the leading shoots to from 18 inches to 20 inches of last year's growth. This will result in the formation of fruit-buds, in addition to promoting a symmetrical shape in the individual trees. Once young trees of this description have borne a fair crop of fruit, they will require very little annual pruning beyond the cutting out of a branch here and there where likely to cross each other, repeating the operation more or less every year as may be called for, until the trees acquire the desired size.

Pruning and Cleaning Established Orchard-trees.—Where the trees have become crowded together in the orchard, and but little, if any, pruning has been carried out, they are very apt to be coated with moss or lichen, more especially in humid localities; and a severe thinning-out of the branches and of the worst of the trees is the only remedy for this state of things. The branches that cross each other, or which are too abundant, should be removed entirely, in order to let the air and light into the crown. When the prunings are faggoted and removed, scrape the moss and lichen off the worst affected main-stems and branches within easy reach, with a bevelled strip of board or a strong label, and then syringe the entire crown with a wash made with fresh lime and a few handfuls of fresh soot and water, the liquid being passed through a fine-meshed sieve before using it, and choose a calm day for doing the work. A garden-engine is preferable to an ordinary syringe, especially for applying the wash to full-sized trees. This dressing will not only effectually rid the trees of the parasitic growths, but it will also destroy any larvae that may be in the moss. Hundreds of thousands of fruit trees are ruined annually in this country that by the exercise of timely attention in the direction mentioned above, might be rendered fruitful and remunerative.

THE APIARY.

By EXPERT.

The Feeding of Bees.—Then there is another argument against feeding back (see p. 327 ante), which is that, from some reason or other, this fed back honey is far more likely to become hard or to candy in the comb than is that which is put in the comb at the time it is gathered from the fields. When first taken from the hives it looks very nice and attractive, but when cool weather comes on in the autumn, it assumes a dull, unattractive appearance, showing that the honey has hardened in the cells, while comb-honey produced in the ordinary way is still liquid, and will keep so far from one to three months after the fed-back article has become almost unsaleable.

Combs of Honey for next Season.—Question: I have on my hives about 200 combs very full of honey, which I wish to use for next year's increase. I am at a loss to know what to do, so ask if it would be advisable to throw the honey out with the extractor and use the empty combs, or would it be best to use the full combs of honey? I expect to make my increase by natural swarming.

Answer.—If extracted honey brings a good price in your market, and the honey in the 200 combs is of good quality, then my advice would be to extract the honey and sell it, for the old saying "A bird in hand is worth two in the bush," is generally correct. If, on the other hand, extracted honey drags heavily at a price hardly above the cost of production, or the honey in the combs is of a quality not fit for the market, then I would store the combs of honey away till spring (allowing the bees to protect them till there was no fear of damage from the larvae of the wax moth), when I would use these combs for building up colonies in the spring, by exchanging them with the colonies for combs, that they might have which were empty or nearly so. In this way, you will get this honey converted into brood, which brood, when hatched it to bees, will store for you large quantities of honey. If the colonies in the spring had no need for this honey, then I would use the combs of honey something as you suppose, hiving new swarms on them. If the combs are only from one-third to one-half full of honey, then you may procure the best results by hiving your swarms on the full number of frames, and putting the sections on at the time of hiving. But if completely full from bottom to top, it will be better to use only from four to six combs to the hive when hiving the swarms, for if given a full hive of full combs of honey, the bees may not carry much of the honey to the sections, as they generally will do with the whole where only a few are used. If the bees do not immediately start to carrying the honey from these full combs, the result will be little or no honey in the sections, and little brood and few bees in the hive in the fall. But should the honey in the 200 combs be of inferior quality, or of dark colour, or both, then the only thing to do with it is to extract, or use it for spring feeding, for if such inferior honey is given at swarming time, more or less of it will find its way into the sections, thus injuring the sale of the honey, and giving yourself a bad reputation. "Gleanings" (American).

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Dec. 14 { Royal Horticultural Society's Committee.
Annual Meeting of the National Dahlia Society, at the Hotel Windsor, at 2 P.M.

SALES.

MONDAY, Dec. 13 { Bulbs, Shrubs, Lilies, Border Plants, &c., at Stevens' Rooms.
TUESDAY, Dec. 14 { Japanese Lilies, Continental Plants, Roses, Begonias, &c., at Protheroe & Morris' Rooms.
WEDNESDAY, Dec. 15 { Rose and Fruit Trees, Border Plants, Palms, Shrubs, &c., at Mr. Stevens' Rooms.
THURSDAY, Dec. 16 { Dutch Bulbs, Roses, &c., at Protheroe & Morris' Rooms.
FRIDAY, Dec. 17 { Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—40.5°.

ACTUAL TEMPERATURES:—

LONDON.—December 9 (6 P.M.): Max., 55°; Min., 39°.

PROVINCES.—December 9 (6 P.M.): Max., 48°; Scilly; Min., 35°; Aberdeen.

Weather stormy, mild; light frosts.

In the year 1855, Dr. HOOKER, as he then was, published in conjunction with the late Dr. THOMSON, the first and only volume of the *Flora Indica*. This was but a fragment, though a magnificent one. The introductory essay is a most important contribution to botanical geography, and to the history of botany in India, whilst the notes represent the highest level of botanical morphology at that period. The plan was too vast to be carried out as it was begun, and so, to the great loss of British science, it was abandoned. But the idea of producing a complete *Flora of British India* was not lost sight of, and seventeen years after, the first part of the *Flora of British India* appeared.

With the issue of the twenty-third and twenty-fourth parts containing the index, this *Flora* has now been brought to a close. The first part was issued in 1872. The work thus has taken a quarter of a century to complete. In the earlier years of this period Sir JOSEPH HOOKER was laden heavily with official functions as Director of the Royal Gardens, Kew, together with endless duties arising out of his distinguished position as a traveller, a naturalist, and a botanist. At this time, therefore, the author availed himself of the co-operation of various botanists, and utilised the joint work of himself and Dr. THOMAS THOMSON as published in the fragmentary *Flora Indica*, or in various monographs published in the

Journal of the Linnean Society. Released from the cares of the Royal Gardens, and his labours lightened by the completion of the *Genera Plantarum*, Sir JOSEPH set himself to work with his customary energy to complete the *Flora of British India*. In this task he had the assistance of Mr. C. B. CLARKE, Dr. STAFF, and the members of the Kew staff; but when all allowance is made for material help thus afforded, the amount of original investigation and research, and the mass of literature dealt with and assessed by Sir JOSEPH HOOKER alone, can only be called prodigious. Horticulturists in particular have reason to be grateful for his elaboration of the Orchids of India—itsself a remarkable effort.

During the twenty-five years that have elapsed between the beginning and the end of this book, great changes have taken place. Not only have the collections of plants and literary material been augmented, but British India itself has largely extended her borders. Hence it comes that the later volumes are more complete than the earlier ones. At any rate, we have now a solid and substantial basis for any work that may be hereafter undertaken. From the whole extent of the Himalayas to Ceylon, from Beluchistan to Birma and the Malay peninsula, we have now a descriptive census of plants as complete as it is possible to make it—a work of the utmost value to botanists, and one as honourable to its author as it is a subject of pride to his countrymen. Taking into account the work done at Calcutta by Dr. KING and his assistants, the results of which are published by the government, that effected in the north-west by WATT and DUTHIE, by RIDLEY and CURTIS at Singapore, and by many others, we need not fear comparison with any other country in this matter at least.

The two parts just issued comprise the index to the seven volumes, this index alone occupying 417 pages in double columns! It is satisfactory to know that this index has been collated with the *Index Kewensis*, and that in consequence there will be less room for confusion of nomenclature and difference of usage.

ALBERTA MAGNA was raised from seeds sent to Kew in the summer of 1889 by Mr. MEDLEY WOOD, Curator of the Botanic Gardens at Durban, Natal. It is now an erect woody shrub 4 feet high with evergreen leaves like those of the common Laurel, and terminal panicles, 6 inches long and wide, of bright crimson tubular flowers. This plant has been in flower fully three months, and it is now ripening seeds. A larger plant, 7 feet high, was grown in the winter garden, but it died after being transplanted into the new Mexican-house, where the plant under notice now is. Smaller plants have flowered in pots in the Cape-house, from one of which the figure in the *Botanical Magazine*, t. 7454, was prepared. Mr. BULL included *Alberta magna* among his new plants offered in 1891. The first account in this country of this shrub was published in the *Gardeners' Chronicle* in December, 1888, p. 741. Our illustration (fig. 123) taken from a specimen obligingly forwarded from Kew, does not show the "accrecent" calyx, which it will be remembered occurs in *Mussaenda* and other near allies of *Alberta*.

ROYAL HORTICULTURAL SOCIETY.—The last meeting this year of the Royal Horticultural Society will take place next Tuesday, the 14th inst., in the Drill Hall, James Street, Westminster, when the Fruit, Floral, and Orchid Committees will meet as usual at 12 o'clock. A lecture on "Sporting in *Chrysanthemums*" will be given at 3 o'clock by the Rev. GEO. HENSLOW, M.A., &c.

OUR ALMANAC.—According to previous practice, we shall issue a *Gardeners' Chronicle Almanac* with our first issue in the New Year. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for 1898.

LINNEAN SOCIETY.—At the evening meeting to be held on Thursday, December 16, at 8 P.M., the following papers will be read: 1, "On the Affinities of the Madreporian Genus *Alveopora*," by Mr. H. M. BERNARD, M.A., F.L.S.; 2, "On West-Indian Characeae collected by Mr. T. B. BLOW, F.L.S.," by Messrs. H. and J. GROVES, F.L.S., &c.

"BOTANICAL MAGAZINE."—The December number closes the fifty-third volume of the third series, or the 122nd of the whole work. The volume is dedicated to Mr. A. B. FREEMAN-MITFORD, C.B., the historian of the hardy Bamboos. The plants figured are:—

Agave Schottii, Engelmann, t. 7567.—A species resembling *A. filifera* in having fibrous edges to the leaves, but it has a lax one-sided inflorescence bearing numerous yellow flowers, each about 2 inches long.

Quillaja saponaria, Molina, t. 7568.—An interesting plant furnishing the Quillaya-bark used instead of soap. The specimen figured flowered in Mr. HAYBURY's garden at La Mortola.

Odontoglossum retusum, Lindley, t. 7569.—A species with panicles of orange-scarlet flowers. It is a native of Peru. The specimen figured came from the garden of E. H. WOODALL, Esq., Scarborough.

Kniphofia breviflora, Harvey, t. 7570 (by error 7571).—One of the smallest of known species, with bright yellow flowers. It is a native of Natal. Kew.

Habermaria rhodochela, Hance, t. 7571 (by error 7570).—A Chinese terrestrial Orchid with small green, hooded sepals and petals, and a relatively large four-lobed scarlet lip with a long spur at the base. Kew.

PRESENTATION TO MR. F. Q. LANE, J.P.—At the annual meeting at the King's Arms Hotel, on Saturday, of the Berkhamsted Chrysanthemum Society, of which Mr. F. Q. LANE is the Vice-president, and Earl BROWNLOW the President, Mr. Lane (of The Nurseries) was presented with a silver cigar-box, bearing the inscription: "Presented by the Committee of the Berkhamsted Chrysanthemum Society, 1886-1897," on one lid, and on the other "F. Q. L." Mr. A. Prudames, M.R.C.V.S., made the presentation. Mr. Lane, who was taken by surprise, expressed his thanks for the kindness shown him.

MUSHROOM CULTURE.—M. CH. RÉPIN contributes to the *Revue Générale des Sciences* for September 15 a long paper on the cultivation of the Mushroom in the underground quarries of Paris, and points out the obscurities which still exist as to the mode of nutrition of these fungi. He speaks of the desire of growers to obtain pure Mushroom-spawn, and of their difficulties in this respect. It is now said that by collecting on paper the ripened spores as they fall, Mushrooms of the desired kind can be raised on any nutritive material, such as is used in bacteriology, though not so easily or abundantly as can the inferior sorts. The dung is arranged in layers of equal thickness between overlapping plates of steel, and the whole is subjected to heavy pressure of about 50 kilos. to the square centimetre. When released from this, the dung is found compacted into blocks about a centimetre thick, nearly as hard as wood, and consequently easily handled. These blocks are seeded, then placed under conditions the most favourable to the development of the spawn, care being specially taken to avoid any rise in temperature. The growth of the spawn is thus retarded, but its vigour and activity, when transported to the warm atmosphere of the Mushroom-caves, is surprisingly accentuated. When the blocks of soil are thoroughly stocked by the spawn, they are cut into bricks 8 centimetres (3 inches) long. This operation



FIG. 123.—ALBERTA MAGNA: GREENHOUSE SHRUB. LEAVES EVERGREEN; FLOWERS CRIMSON.
(SEE P. 416.)

is effected very rapidly by means of a special cutting-machine. This compensates for the extra hand-work necessitated in making the blocks, and the final result is a more economic and convenient product to use than the spawn-bricks of the Mushroom-growers. It is needless to revert to the beneficial influence this innovation cannot fail to exercise on the Mushroom industry. Not merely is the problem of re-stocking with pure spawn—a problem always recurring—now solved once for all, but the Mushroom-grower henceforth can choose the variety which will best succeed in his beds, this being as the spawn exactly preserves the smallest morphological and physiological peculiarities of the original kind. Finally, this spawn is exempt from disease, a consideration which is also of value.

THE BEET-SUGAR INDUSTRY.—Many years have passed since Mr. DUNCAN, of Mincing Lane, London, proved, by extensive and exhaustive experiment in the vicinity of St. Albans, that the Beet-Sugar industry was not suited to our agriculturists. Possibly, experiments made since then have given better results: we would gladly notice them—the subject being one of interest to us all. The industry, as practised on the Continent, constantly interests, not only dwellers at home, but very many of our colonial friends. That the crop is of considerable value to bounty-paid growers in Germany, France, &c., may be gleaned from the following figures, collected by the Statistical Association for the Beet Sugar Interest at Magdeburg, who quite recently published the following comparative statement: "The amount of crop for the current year is estimated at 1,790,000 tons, as against 1,821,000 for last year; Austria-Hungary, this year, 922,000 tons; last year, 927,000 tons; France, this year, 751,000 tons, as against 703,400 in 1896." It will be seen that there is an estimated decline of nearly 90,000 tons; the actual turn-out may alter and improve these figures. Continental agriculturists would seem to be of the class "specially favoured," for not only is their Beet crop protected by an export premium, but the farm crops of other countries are handicapped by import duties.

CHRYSANTHEMUM CULTURE.—After admiring the magnificent specimens lately exhibited, many a gardener and many an amateur will be disposed to try his hand at the cultivation of the autumn Queen. He will find his trouble lightened by the perusal of an excellent little book just issued by Mr. GEORGE GARNER under the title *Modern Chrysanthemum Culture for the Million*, and published by BLAKE & MACKENZIE of Liverpool. We cordially recommend the little work, as the directions given are simple and trustworthy. We notice the buds are said to be "secured" instead of taken. Perhaps selected would be better still. A list of some of the best flowers in each section is given, with the treatment appropriate to each.

CHRYSANTHEMUM AFSNÉ.—This is a new white Japanese variety, raised at Afsné, the country residence of M. FRIESENS, the secretary of the Royal Society of Agriculture and Botany at Ghent. The plant is of dwarf habit, producing ivory-white flowers 6 to 7 inches across, and is figured in the current number of the *Revue de l'Horticulture Belge*.

THE COMMERCIAL USES OF COAL-GAS.—We have already incidentally alluded to this little book by Mr. THOMAS FLETCHER, and published by FLETCHER, RUSSELL & Co., of Warrington, but do so again on account of the practical importance of the subject. The reader will find just the information he requires as to the economical and efficient use of gas for various purposes, and within a hundred pages will find details for which he might have otherwise to wade through many volumes.

A HYBRID DOMBEYA.—Our excellent confrère, M. ED. ANDRÉ, describes and figures in the *Revue Horticole* a hybrid out of *Dombeya Masteraii*, Bot. Mag., t. 5639, by pollen of *D. Wallichii*, better known as *Astrapea Wallichii*, a fine plant, rarely seen outside of botanic gardens. The hybrid

flowered in the garden of the Botanic Garden at Lisbon, where it was raised by M. CAYEUX, hence the name *Dombeya Cayeuxii* ×, given to it by M. ANDRÉ. It has large cordate, dentate leaves, and large trusses of rose-pink flowers, each about 30 mill. across. It is hardy at Lisbon, and may probably prove so along the Riviera. In this country it would form a noble inmate of a warm conservatory.

HYBRIDS.—M. MARTIN CAHUZAC has sent to the editor of the *Semaine Horticole* six flowers said to be the result of a cross between a *Chrysanthemum* and a *Dahlia*. The evidence of hybridisation does not appear to have been very marked. A week or two ago, Mr. E. J. LOWE sent us flowers of a cross between a *Sunflower* and a *Dahlia*; the flowers were those of a *Dahlia*, but the central disc was proportionately larger and deeper. Improbable as such crosses appear, it would be rash to assert that they are not possible. Very often the application of the foreign pollen seems to induce enhanced growth of the seedling without actual change of form having taken place.

HYBRID BETWEEN A PHEASANT AND A BLACK GROUSE.—Mr. HARTING exhibited at a recent meeting of the Linnean Society a bird from Shropshire, precisely resembling a similar hybrid figured in early editions of *White's Selborne*.

PRODUCE OF WHEAT, BARLEY, AND OATS.—Preliminary statement showing the estimated total produce and yield per acre of Wheat, Barley, and Oats in Great Britain in the year 1897, with comparative statements for the year 1896, and for the average of the ten years 1887-96:—

COUNTRIES.	WHEAT.		BARLEY.		OATS.	
	1897.	1896.	1897.	1896.	1897.	1896.
ENGLAND ...	Bushels. 51,497,660	Bushels. 54,322,280	Acres. 1,764,206	Acres. 1,690,255	Bushels. 29,296	Bushels. 28,886
WALES ...	1,382,192	1,076,090	33,810	46,978	21,706	22,952
SCOTLAND ...	1,863,386	1,451,362	40,170	57,729	37,471	38,471
GREAT BRITAIN ..	54,013,238	57,062,952	1,897,905	1,693,957	29,099	29,365
ENGLAND ...	55,146,736	56,843,547	1,607,782	1,778,779	32,438	33,044
WALES ...	3,116,138	2,822,170	104,571	107,702	29,786	29,801
SCOTLAND ...	8,358,919	8,106,030	283,046	316,283	36,633	37,714
GREAT BRITAIN ..	66,603,579	70,774,776	2,005,340	2,104,764	32,822	33,533
ENGLAND ...	73,901,875	69,402,150	1,828,015	1,778,779	40,266	37,000
WALES ...	7,765,902	7,176,786	238,210	241,612	32,566	29,771
SCOTLAND ...	85,442,224	87,433,971	968,474	1,008,116	36,600	37,713
GREAT BRITAIN ..	116,812,461	114,015,907	3,004,999	3,003,488	38,499	36,833

Board of Agriculture, 4, Whitehall Place, S.W.
December 4, 1897.

PORTUGUESE FLORA.—The last issued part of the *Boletim da Sociedade Broteriana*, edited by Professor HENRIQUEZ, contains an article in French by M. J. DAVEAU, on the littoral flora of Portugal. The district north of the Tagus corresponds roughly to the region of *Pinus maritima* (Pinaster), and of deciduous Oaks; that to the south of Tagus answers to the *Pinus Pineas*, and of Evergreen Oaks. The former has many relations to the flora of North-western Europe; the latter is distinguished

by the number of endemic species, the frequency of Iberian forms, and the appearance of Algerian and Moroccan types. Mediterranean species are the most numerous, but not everywhere predominant. Each of the two great districts divided by the Tagus has its littoral, its region of the plains, its mountainous and its sub-alpine regions. In the present communication, M. DAVEAU treats solely of the littoral region. The "littoral land" possesses no analogy with the littoral flora of North Europe, and possesses a special local and Iberian flora.

THE COPPER PLANT.—Mr. S. B. SKETCHY in the *Geological Survey of Queensland* gives a description in a figure (tab. xviii.) of a *Caryophyllaceae* plant, which is, it is said, always associated with copper lodes. The plant in question is *Polycarpea spirostylis* of FERN. v. MÜLLER, and it occurs all over the copper region of Queensland, but always on or close to the copper deposits, or along watercourses charged with copper in solution. So abundant and so characteristic is it, that the presence of the copper is readily detected by the miner from an inspection of the plant. The Government analyst, Mr. BROWNIE HENDERSON, has analysed the plant and its ashes, and has discovered in them distinct traces of copper. The quantity found is larger than a mere accidental absorption would account for. Some birds it is known contain in their feathers a red pigment known as turacin, and which contains as much as five per cent. of copper.

ROSA BERBERIDIFOLIA.—Some years since the flowering of this plant with the Rev. Mr. EWBANK afforded us the opportunity, thanks to the kindness of that gentleman, of studying the peculiarities of this plant. Some writers consider it so different from a Rose that they place it in another genus; but we observe that M. PAUL PARMENTIER, in the *Comptes Rendus of the Bulletin of the Royal Botanical Society of Belgium*, 1897, p. 25, relying on anatomical data, shows that this plant has all the distinguishing characteristics of the genus *Rosa*:—"The structure of the petiole is practically the same as that of *Rosa*, and, according to MASTERS, these stipules exist in a latent state, or rather, the petiole has potentially the faculty of developing them under the influence of suitable cultivation." He quotes, in support of this theory, *Fraxinus*, *Fragaria*, and *Gleditsia*, which, under cultivation, bear 1-foliate leaves. M. PARMENTIER does not believe that such a transformation could ever be induced in a leaf of *Rosa*, or that *R. berberidifolia*, with composite leaves, could be produced. Pallas' Rose is a plant from arid desert soil, which has acquired great structural fixity, and which has lost the power of varying just because it has lived for a considerable time under conditions very different from the usual surroundings of vegetation, and themselves varying but little. It has admirably adapted itself to this unusual position; the transpiratory functions are in abeyance, the assimilatory power increased. The lateral leaflets have disappeared, and only the terminal one is a real leaf; the stomata, in compensation, are developed on the upper epidermis, but in sinking their ostiole in this epidermis at the same time, all the layers of the mesophyll are transformed into palisade cells. For figures, see *Gardeners' Chronicle*, July 20, 1889, p. 78.

THE NEW FLORA BRITANNICA.—The discovery in the Lindley Library of this volume (see ante, p. 405) has served to reveal the fact that the same book was published under different titles, and at different dates. In our last issue, Mr. BENNETT-PONS narrated how he got his first stimulus from this book; and we now learn that the title of this particular edition is the *Complete Dictionary of Practical Gardening*, by ALEX. MACDONALD, original drawings by SYDENHAM EDWARDS. It is in two volumes, and contains sixty coloured plates, and bears date 1807. The total number of flowers figured is 134.

NATIONAL CARNATION AND PICOTEE SOCIETY.—The annual general meeting of the above Societies will be held in the Room of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Wednesday, December 15, at 7 P.M.

DUCHESS D'ANGOULÊME PEAR.

The finest and heaviest specimen of Duchesse d'Angoulême Pear that I had hitherto seen came my notice a short time ago. The fruit, one of four growing on a young tree on a wall in a south-west aspect (see fig. 124), measured round near the top, $7\frac{1}{2}$ inches near the base, 5 inches in circumference lengthwise, and the scale at $1\frac{1}{2}$ lb. This handsome fruit was coloured and of fine flavour. It was grown in the gardens of Stradey Castle, Llanelli, by Mr. T. an old pupil of the writer's, who has made improvements in the gardens during the six or seven years that he has had the management of the gardens. Mr. Lucas writes in reference to the specimen fruit: "I am proud to think have grown the finest specimen of the Duchesse d'Angoulême Pear that has come under your notice, by the one in question was the heaviest of forty-four fruits gathered from the tree; twelve fruits weighed nearly $1\frac{1}{2}$ lb. each, and the rest was a trifle over $\frac{1}{2}$ lb. I must tell you that it did not bear a single fruit in 1896, neither did the tree of Marie Louise on the same wall have any. Consequently, last autumn I dug out a trench each tree, and thoroughly root-pruned both and filled the trenches with a mixture of good and lime-rubble in the proportion of four parts former to one of the latter; making due allowance for the soil settling down a few inches in as many finishing off with a top-dressing of manure and a application of water at the time, and as often could do so during the summer and early autumn, with the result that the foliage of both trees most black in summer as compared with that of Pear-trees on the same wall—so much so that when visiting the gardens observed the difference. I gathered more than 2 bushels of excellent fruit from the Marie Louise, the fruits being clean and clear in the skin, of extra size, and of fine flavour. There are several trees of Duchesse d'Angoulême Pear in these gardens besides the one in question, and I have treated all of them this autumn in the manner indicated."

It is curious to seeing the Stradey Castle specimen of Duchesse d'Angoulême Pear, the finest examples of this variety which had come under my notice were (not for competition), at the Bournemouth and the Horticultural Society's autumn show, by the late Mr. Hitchcock, who is himself a keen pomologist. The size, evenness, and high quality of the specimens exhibited were commented on in the pages of the show published in the *Gardeners' Chronicle* at the time. I enclose a photograph of the Stradey Castle tree in fruit, and Mr. Lucas examining it. H. W. Ward, Rayleigh, Essex. [The heaviest fruit of this variety of which we have any note is $1\frac{1}{2}$ lb. 10 oz. See *Gardeners' Chronicle*, Oct. 1, 1897. It was grown by Mr. Symons, Carclew. ED.]

NOTES ON NEW CHRYSANTHEMUMS.

Sooner has the last of the exhibitions been held, and cultivators are engaged in the revision of the varieties to be cultivated for the succeeding season. Exhibitors know well the advantages to be gained by the inclusion in their collections of new varieties that are improvements upon older ones. For instance, the two white-flowered varieties, Madame Carnot and Avalanche. The former is quite a new white-flowered variety up to date, and the latter a half-a-dozen years ago occupied a similar position. Madame Carnot grows quite as large again as Avalanche, and in all other qualities it is superior to the latter variety. The disadvantage an exhibitor suffers from did he not cultivate Madame Carnot is therefore obvious.

For any readers of the *Gardeners' Chronicle* who have had opportunities to see for themselves the novelties, I purpose referring to some of the noteworthy that have come under my notice. It cannot be said that the season now closing has been very prolific in new varieties of sufficient merit to place them in the front rank at once.

The Japanese varieties being most popular with the public, as well as with cultivators, for the reason that they are so useful for decoration, I will allude to them first.

White-flowered varieties are usually regarded with high favour when they possess the necessary points of size, coupled with other items that go to make a perfect bloom.

Simplicity, although not absolutely new, was seen but little last year, and may therefore be classed as such. It is a full sized, well "built" bloom, of purest white, with somewhat narrow florets slightly flattened at the tips. Cultivators should not "take" too early a bud, or the florets become too tubular to present the best effect.

Madame Louise Reney is a pure white sport from the well-known Mrs. C. H. Payne. Those who are pleased with extra large blooms should grow this new variety. It is the exact counterpart of its parent in every way except colour.



FIG. 124.—A FRUITFUL TREE OF DUCHESS D'ANGOULÊME PEAR, AT STRADEY CASTLE.

Mrs. J. Lewis was sent out by Calvat last year or early in last spring, and is one of the best of modern introductions. The blooms are massive, the florets broad, and not too stiffly or loosely disposed. The purity of the blooms in colour, too, is especially noteworthy. It has a fine dwarf habit of growth, excellent blooms being obtained from plants 4 feet high.

M. Philippe Rivoire is best described as a much-improved *Souvenir d'une Petite Amie*, itself one of the finest varieties to grow for decoration—say, twelve blooms on a plant.

Mrs. Weeks, one of last year's introduction, has maintained its reputation as being one of the best of incurved Japanese varieties. No collection is perfect without this sterling novelty.

Lady Byron is another that has stood a severe test during the season just past.

Western King is a pure white, compact, ball-like blossom, praised by all who see it.

Mrs. C. Blick has given many substantial, highly-prized blooms of the purest white, and all cultivators are recommended to add this to their collection.

Mrs. Ritson.—*Vivian Morel* has at last given a pure white-flowered sport, the exact counterpart of its parent. *Mrs. Ritson* has, therefore, undoubtedly fine qualities.

Emily Silbury is, as the raiser claimed it to be, one of the best of white-flowered varieties; a trifle early, perhaps, but if this be so, it is the only fault that can be urged against it.

Snowdon much resembles *Avalanche* in its florets and general character, but grows to a larger size, and is in every way desirable.

Yellow-flowered varieties are generally more numerous than any other type. But few novelties of merit even of this colour are to be found this year.

Mrs. W. Mease, a primrose sport from the popular *Madame Carnot*, and *G. J. Warren*, a pure yellow-flowering sport from the same variety, originated last season, are quite the best, and, along with the parent, form a pleasing trio.

Royal Sovereign belongs to the incurved class of Japanese, in colour a rich orange-yellow.

Oceana, one of last season's introductions, will hold its own amongst pale yellow varieties in the incurving section.

Ellis Curtis, bronze-yellow, reminds one of *Boule d'Or*, so popular ten years ago.

George Foster is an English-raised seedling with irregularly incurving florets; pure yellow.

President Nonin, amongst apricot-yellow-flowered varieties, deserves attention.

Admiral Ito should commend itself to those who favour the erect petalled varieties; the florets are twisted much at the points.

Lovely is an American seedling of the palest yellow; the incurving florets make a full solid bloom.

Vicar of Elthorne is another bronzy-yellow-flowered variety, well worthy of attention; and equally so is *Mrs. C. Keyser*, which reminds one of the old Criterion style.

C. W. Richardson was sent out last year with a good flourish, which it has well sustained, the long, drooping, curling florets giving to the flowers a distinctive character.

Coloured varieties are more numerous, and need considerable selection.

Mary Molyneux is an incurved Japanese of large size and pleasing colour, being rosy-peach, with a silver suffusion. It is an American seedling.

Robert Powell, terra-cotta-bronze, lined and flushed with purple, is one of the best Japanese varieties with incurving florets.

M. Bruant is bluish-white, suffused purple, with irregularly incurved florets.

Lady Hanham, a golden rosy-cerise sport from the popular *Vivian Morel*, will find many admirers when more widely known.

Julia Scaramanga in style is much like the preceding sport. Colour rich bronze terra-cotta, with a light golden reverse.

Royal Standard, a crimson flower, is the brightest in colour of any variety introduced this season. The florets are broad and flat.

Master H. Tucker is darker in tint of its crimson the slightly incurving florets show both colours readily.

Werther, reddish-purple, is showy, but not large.

Mrs. F. A. Bevan is a flesh-pink coloured variety with drooping florets.

Mlle. Laurence Zede is rosy lilac in colour, with narrow-pointed petals which incurve closely, making a full solid flower.

Incurved novelties are not numerous, it being less easy to obtain from seed varieties of this section equal to the best of those already in cultivation. If we can count annually upon half-a-dozen distinct varieties that show an improvement on some existing kinds, *Chrysanthemum* cultivators must be satisfied.

Mlle. Lucie Faure was sent out in the spring of the present year by Calvat as a Japanese incurved. It is now recognised by the Floral Committee of the National Chrysanthemum Society as belonging to the Chinese, or properly incurved section. Well grown blooms are certainly magnificent, measuring fully 5 inches wide, and as many deep. The florets are pointed, incurve regularly, and are of the purest white.

Mrs. N. Molyneux is an English-raised seedling from two well-known varieties, *James Agate* and *C. B. Whitnall*. Full-sized blooms are 6 inches wide and 5 inches deep, of globular form, and ivory-white in colour. The habit of growth is desirable, being in few cases higher than 4 feet to 5 feet.

Madame Ferlat is another of Calvat's 1897 introductions, and promises to be fully up to expectation.

The petals are narrow, the ground-colour white, with a faint pink flush. A full and promising variety.

Austin Canwell reminds one of Lord Derby in colour, except that the new variety has silver lines running through the reverse of the petals; a full and desirable variety.

Ernest Canwell is another type, and equally deserving of attention. In colour it is blush-pink at the base, with a yellow suffusion.

Mrs. W. C. Egan is best described as a pale-coloured P. Petfield, and as this is a favourite, the new variety is worthy of a trial.

Miss Dorothy and *Miss Violet Foster* were both distributed last spring from the same source. Both are likely to take a prominent position, as they possess all the characteristics needful to make sterling exhibition varieties. The former is silvery-mauve in colour, the latter silver-rose. *E. Molyneux*.

MAXILLARIA ELEGANTULA,

Rolfe, n. sp.

Our illustration (fig. 125) represents the pretty *Maxillaria elegantula*, shown by Messrs. F. Sander & Co., St. Albans, at the Royal Horticultural Society, November 23, 1897, when the Orchid Committee awarded it a Botanical Certificate. The bases of the segments are white, the outer halves pale yellow, marked with chocolate colour. Its nearest ally seems to be *M. fucata*, illustrated in the *Gardeners' Chronicle*, November 17, 1888, p. 577.

THE ROSARY.

ROSE: CLOTH OF GOLD.

THIS beautiful Rose, which was raised just fifty years ago by Quereau, and brought out under the French name of *Chromatella*, has, I think, been rather unfairly treated, and I am glad, therefore, that attention has been drawn to it. What I mean by being unfairly treated is this, it has been considered so difficult to flower, or, indeed, to keep alive, that people have not attempted its culture, and yet I look upon it as one of the most beautiful of our yellow Roses. Your correspondent has mentioned some examples of it to show that under certain circumstances it is very vigorous and long lived; though I think it must be a mistake to say its stem is 15 inches in diameter. I think that in many places in our southern counties, in suitable positions, it would thrive well; one such instance I well recollect. When I came to this parish thirty years ago there was a magnificent plant of it, which nearly covered the front of a house which was then inhabited by two ladies, one of whom was a great friend of the late Rev. Joshua Dix; she was very fond of her garden, in which she had collected many good things, but I think the especial ornament was this fine tree—when I first saw it, it was a sight not to be forgotten. The house faced about S.W., and the soil of the garden was light and sandy; it was well sheltered from N. and N.E. winds, and, of course, had, from its position, a good amount of sunlight. I counted, as well as I could, the number of blooms and buds on it on the day of my visit, and there were about 250, borne in true Noisette fashion, in clusters of three or four. And what blooms they were! firm of texture, and deep of build, with footstalks so strong that every flower was held erect. "But what about the colour?" some may say. Well, it has not the rich golden-yellow of *Maréchal Niel*, but neither has it the defect of that beautiful Rose, of hanging down its head. The colour is a soft sulphur-yellow, described by some of the French raisers as *jaune foncé*, and as long as it flourished it was always a treat to see it in flower.

Oh, then," you may say, "it did not live!" No; simply because it was killed. The two ladies died, and the landlord took possession of the place and altered it; he sent his head gardener to alter and improve the garden! no suburban gardener could have had a more vandalic idea of improvement than this good man. Many a choice shrub was sacrificed, but the

worse fate of all befell the Cloth of Gold; it was ruthlessly cut away, and like all Noisettes, it resented the insult, and although the stem was as thick as my arm, it never did anything afterwards, and it no longer exists. But I see no reason why, if it had been properly treated, it should not have lived on to the present time; and surely there are many situations in our southern counties where an equally good position might be found for it—and yet such is the general disfavour with which it is regarded, that it does not appear in the catalogue of the National Rose Society, either among exhibition or garden Roses.

My object in writing this is to try and induce growers who are favourably situated to make a trial of it. I once had an adventure with this Rose: it was in my very early days of Rose-love; and this flower has been one of the last to which I have paid my addresses. The Auricula, Carnation, Picotee, and Ranunculus, engaged my earlier affections, and so it came to pass in the days of my ignorance I saw some plants of it in pots at a nurseryman's in Lincoln. I was coming home, and actually burdened myself with carrying a plant of it. It had a promising bud, which flowered when I got it



FIG. 125.—MAXILLARIA ELEGANTULA.

home; but, alas! it did no more. Probably had it been twenty years later, I should have succeeded with it. Will not, therefore, some of our amateurs in the South of England give this fair Rose a trial?

As I am writing about Roses, and amateurs are busy planting, it may not be out of place to call their attention to the new form of Acme label, manufactured by Mr. John Pinches, Oxenden Street, Haymarket. It is the very perfection of a Rose-label: the name faces you, and there is no need of wetting the label to see what it is. It is really imperishable; and as I have had it now for two seasons in use in my garden, I can testify to its great comfort and neatness. Moreover, it is not dear, and amateurs who wish their Roses neatly and permanently labelled, will, I think, give me their thanks for drawing attention to it. *Wild Rose*.

AMERICAN NOTES.

PROTECTING PEACH-TREES IN WINTER.

PEACHES are very largely grown over wide areas in the States and in the province of Ontario, and there is a constant effort among amateurs to push their culture as far north as possible. The chief problem in this case is the protection of the tender

wood against freezing; but all over the States, south as well as north, a principal concern is to protect the swelling fruit-buds from late spring frosts. These questions have recently received an illuminating review, and a useful original experimental study by Professor Whitten of Missouri. Some of his conclusions are as follows:—"The early swelling and growth of the buds is due to the warmth they receive, is practically independent of root-action, and may take place on warm sunny days in winter, while the roots are frozen and dormant. Shading or whitening Peach-trees to prevent their absorption of heat on sunny days opposes growth of the buds, and is, consequently, a protective measure. Shading the trees with board sheds enabled Peach-buds to survive the winter uninjured when 80 per cent. of unprotected buds were killed. Whitening the twigs and buds by spraying them with whitewash is, on account of its cheapness and beneficial effects, the most promising method of winter protection tried. Whitened buds remained practically dormant until April, when unprotected buds swelled perceptibly during warm days late in February and early in March. Whitened buds blossomed three to six days later than unprotected buds, and 80 per cent. passed the winter safely when only 20 per cent. of unwhitened buds escaped."

In this same connection, the investigations of Mr. John Craig, horticulturist at Ottawa, are of interest. According to his observations, tender fruit-buds are not always correlated with tender leaf-buds. There is a striking difference among varieties of Peaches and Plums in the ability of their fruit-buds to withstand severe winter weather. The varieties of Peaches which Mr. Craig finds hardest in this respect are Hill's Chili, Loughurst, Barnard, and Early River. The hardest varieties of Plums (of the Domestic class) are, as regards the fruit-buds, the English Damson, Shropshire Damson, Blue Damson, and Canada Orleans. Other experiments by Mr. Craig also emphasise once more the inutility of mulching to retard blossoming in spring.

THE RÔLE OF THE SOLUBLE FERMENTS IN GERMINATION.

During the past year we have been making some very interesting experiments at the Vermont Experiment Station in the artificial use of enzymes, or soluble ferments, in the germination of seeds. Diastase is the reagent with which we have worked most, and with which we have had greatest success. It is well known that old seeds lose, in greater or less degree, their capability of germination. This, we assumed might be due to the weakening of the enzymic ferments known to be present in fresh mature seeds, and generally understood among physiological botanists to play an important part in the digestion of reserve materials in the seeds for the use of the unfolding plantlets. Our method of procedure is to make a 5 per cent. or 10 per cent. solution of fresh malt. The seeds are then soaked for twenty-four to forty-eight hours in the strained solution, the solution drained off, and the seeds planted. As a check in these experiments, an equal number of the same seeds are always soaked in water and planted beside the treated seeds. Although we have had many negative results, some of the positive testimony is really surprising. Tomato seeds twelve years old showed the following percentages of germination:—

Soaked in water	...	12 per cent.
Treated with pepsin, 5 per cent.	...	70 "
" " " 10 per cent.	...	80 "
" " Diastase (malt) 5 per cent.	...	84 "
" " " 10 per cent.	...	85 "

Thus the treatment with the stronger diastase solution gave an increased germination over the sample soaked in water of 608 per cent. Another sample of Tomato seeds, five years old, gave the following results:—

In water	...	76 per cent.
In Extractum Pancreatis	...	80 "
In Trypsin	...	86 "
In Enzymol	...	90 "
In Diastase Essence of Pancreas	64	"

Our experiments are only preliminary thus far, but they offer intensely interesting suggestions. Of

course, the most obvious practical application would seem to be the use of malt solutions in germinating old and weak seeds. The treatment is attended with scarcely any expense of time, trouble, or money, and, if it prove useful in practical work, can be undertaken by anybody. *F. A. Waugh.*

NEW WEST AMERICAN LILIES.

In *Erythraea* for October, 1897, Mr. Carl Purdy, the well-known bulb-collector of Ukiah, California, describes three new Lilies from the north-west:—

Lilium occidentale, the Eureka Lily, occurs in boggy places in barrens and woods about Humboldt Bay, occupying the place which *L. maritimum* takes further south; its nearest relative is *L. maritimum*, but it has larger flowers, with long revolute lobes.

Lilium Bakeri comes near to *L. columbianum*; its colour is a little more orange than the latter, "the lower portion dotted thickly with small maroon spots;" the segments of the perianth are closely reflexed from the middle. It is described as being "very fragrant, perfuming the air for rods around." Habitat: "Sandy woods along Puget Sound, in northern Washington and southern British Columbia."

Lilium parvum var. *luteum* differs from the type in the clear brilliant reddish-orange-coloured petals, not tipped with red, spotted with small spots of bright red. It is a native of Plumas Co., California. Mr. Purdy adds, "I do not agree with those authors who would limit *L. parvum* to the funnel-formed type, and throw any or all of those forms with reflexed petals into *L. pardalinum*. I consider the peculiar three-jointed scale, the pale foliage, and the shorter, rounder capsule more specific characters than the form of the flower, and would throw all of these alpine Lilies into *L. parvum*. *L. pardalinum* var. *minor* is, in my opinion, a form of *L. parvum*." *J. Burt Davy, University of California, Berkeley, California.*

HOME CORRESPONDENCE.

ROYAL HORTICULTURAL SOCIETY'S MEDALS AND AWARDS.—While there is both wisdom and truth in the observations by "Authority" at p. 402 on the above, and with which many will most cordially agree, it is difficult to discern the motive "K." had in view when penning the latter portion of a self-contradictory note. For on the very face of it with these medals of "lesser value," and so long as they are so relatively valueless, one cannot see the reason for the "avariciousness" that your correspondent assumes to exist in the desire to obtain them. Had these been money prizes I could have seen some ground for the remark; but so long as these Medals retain the merely nominal value they represent, the observation appears quite uncalled for. Surely "K." is not so woefully ignorant of the facts as to know that many of these Medals are given as some acknowledgment of successful culture of the plants, fruits, or flowers shown; for it is utterly impossible, even did the winner feel inclined, to turn them into cash, that they would repay even the time and travelling-expenses of the assistant private gardeners who are a necessity where large groups or collections are staged. That there are gardeners who only exhibit when a substantial money-prize is awarded is well known, and it is equally well known that in some of the most frequent exhibitors the Royal Horticultural Society finds its most staunch supporters—men worthy of the calling they are following, who regard it a part of their duty as head gardener to carry on a certain amount of exhibiting in the interests of the young gardeners, who now work with them, and who will remember with gratefulness the opportunities thus afforded them. Of this latter class there are happily gardeners who from personal experience must be each year pounds out of pocket by such exhibiting, while the only recompense is the Silver Medal, or what not, of the Society in question. And because a good gardener may, if he so choose, be a frequent exhibitor, and thereby secure a few of these medals, of no real worth, a correspondent like "K." assumes such action to be "pitiful," and as "degrading horticulture." The same correspondent would doubtless tell us that the finest soldiers of to-day are degrading the Army because these very men not only win and receive medals; for they proudly decorate their well expanded breasts with these reminders of the past. The gar-

dener does not go quite this far, and still clamour around for one more space to be occupied, but he quietly treasures such things in his private abode, and will doubtless reverse them in the years to come. The last suggestion of "K." is an impossible one, just at the moment when the Council of the Royal Horticultural Society have so signally announced themselves in favour of giving medals by their last creation in this direction. The gardeners who secured one of these latter will now be able to have a central figure in the decoration of their rooms by these well-won tokens. *Rez.*

THE LATE HORACE BILLINGTON.—The writer of the obituary notice of the late Horace Billington, Curator of the Botanic Garden at Old Calabar, is in error in stating that "it is also very unfortunate that a good man was not put with him to assist. . . . Such a man would have learnt very much from Mr. Billington's experience, and the Government would have had someone now to rely upon to continue the valuable work started by Mr. Billington" (p. 406). A competent gardener was sent out from Kew to Old Calabar to assist Mr. Billington a year and a half ago, as will be seen from the following extract from the *Kew Bulletin*, 1896, p. 147:—"Mr. John Henry Holland, a member of the gardening staff of the [Royal] Gardens, has been appointed, on the recommendation of Kew, by the Secretary of State for Foreign Affairs, Assistant Curator of the Botanic Station at Duke Town, in the Niger Coast Protectorate. He left Liverpool for Old Calabar in the middle of June." That Mr. Holland has given satisfaction is shown by the following official statement by Mr. Billington himself, and also by one from H.B.M. Commissioner in the Niger Coast Protectorate:—"Old Calabar, Aug. 12, 1897. During the time Mr. J. H. Holland has been in the service of the Botanical Department, extending over a period of thirteen months, both as Assistant Curator and as Acting Curator, he has performed his duties in a satisfactory manner, and worked hard. Mr. Holland is well-informed on the cultivation of economic plants, as well as in other branches of horticulture (Signed) Horace W. L. Billington." "I have found Mr. Holland a reliable and hard-working official (Signed) R. Moor, H.B.M. Commissioner and Consul-General." In justice to Mr. Holland and to Kew, I shall be much obliged if you will publish this statement. *W. Watson.*

YELLOW BANKSIAN ROSE.—I am sending you two sprays of the yellow Banksian Rose, picked from a plant growing on the front of Mr. J. C. Walkey's house at Ide, near Exeter, and wholly unprotected. Quite recently I saw a farm-house, near Dawlish, with *Solanum jasminoides* covering half of the front, and blooming profusely. Cowslips, Polyantheses, Primroses, Pansies, and the like have been very plentiful up to the beginning of this month in gardens near Exeter. *A. H.*

TESTACELLA HALIOTIDEA.—So far as my experience goes, these worm-eating slugs, which have been so freely commented upon of late in your columns, are much more widely distributed than people imagine. I find them here in quantities, but most abundantly in spring; the larger ones often in the act of devouring a worm apparently twice its own size. At this season of the year, scarcely a day passes but I see one or more on the land, from quite small ones not larger than a straw, to the full grown, as large in circumference as the small finger. Where a box has been left on the damp earth a day or two, there one may almost be certain of finding the above species. *E. Jenkins, Hampton Hill, Middlesex.*

STANDARD ROSES.—It is narrated of Mr. Woods, who came from Paris to Maresfield in 1824, that he sent some standard Roses from Paris to a builder at Brighton, desiring him to have them planted in a garden attached to a house then in course of construction. The recipient of the Roses acknowledged the receipt of a "bundle of sticks," from which some thief had stolen the Roses. Directions were, however, given that the sticks should be planted root downwards, and next year many of the Brightonians were delighted with their first sight of a standard Rose. *C. W.*

POTATO-SPIRIT.—It would be interesting to know what proportion of the Potato crop of Europe is devoted to the production of spirit. We know in a general sort of way that it is a large one in Germany, Poland, and Austria, and enormous quantities of the tubers find their way to the distillery and the starch manufactory; but what this propor-

tion bears to the whole, is not generally known in this country. The spirit obtained from the Potato is commonly consumed by the peasantry in those countries, it being very cheap and not very potent, and takes the place of beer and wine with the poorer classes. The poisonous principle of the Potato, solanin, cannot be any means known at present be entirely separated from the distilled product, and it acts very injuriously on those who indulge largely in Potato-spirit drinking, otherwise no perceptible ill effects follow moderate use. Much harm is undoubtedly caused to the natives of Africa and Polynesia, who, unacquainted with evil effects of the crude spirit sold to them by the trader, indulge in immoderate consumption with lamentable effects. *Traveller.*

AUTUMN v. SPRING DIGGING.—Mr. Easter, who writes so well on this subject, I notice, assumes that autumn-digging of stiff or clay soils is almost a necessity. Having had to work for twenty years several acres of as tenacious a description of soil as Middlesex can show, I may tell Mr. Easter with some knowledge, that early winter-digging of such soil was either a success or a lamentable failure, just as the winter was dry or wet. Given a wet winter, then the after-condition of the dug soil was greatly worse than that of the undug; indeed, taking the average of seasons, I found it was far safer and wiser to leave digging to the spring, as the ground then would work fairly well; whereas if early dug, a wet winter, or even a few heavy downfalls of rain, would leave the soil saturated, pasty, clinging, and absolutely unworkable. Naturally, one wishes to get ground dug during the winter, to at once facilitate spring-work, and to furnish labour in the winter, but the results were always distressing if the season was at all wet. Even if thrown up over so rough, and frost came, and broke up and pulverised it, yet so soon as rain came, the fine broken surface became literally mortar, and, choking up the soil-pores and worm-holes, then dried, left the ground hard and impervious. Generally, for clay soils, it is far better to allow them to remain all the winter untouched, but, if possible, carrying a green crop of some sort, even if but weeds, because such vegetation does gather and convey into the soil fertile elements, whilst barren or fallow soils simply allows them to waste. Still, this is old teaching, literally as old as the hills; but sound as it is, it is too little put into practice. Why is there such a dead set raised against earth-worms that readers want to increase the carnivorous Testacella? Do not the earth-worms play a most valuable part in the economy of soil creation and cultivation? work that seems to be too little recognised. *A. D.*

NEW VIOLETS.—At the recent Chrysanthemum show in Brighton some of the finest Violets I have ever seen were shown by Messrs. J. House & Son, of the Coombe Nurseries, Westbury-on-Trym, near Bristol. These were large, of nice colour, and very fragrant. One of the best was California, a strong grower, double the size of our well-known Improved Czar, and of an intensely deep violet-purple. The stout stems were from 10 to 14 inches long. Princess of Wales, a large dark-tinted variety, was said by Mr. House to be the largest in cultivation; the stalks were not quite so long as in California, nor was the fragrance as pronounced, but the flowers were carried boldly upright. Italia and Primavera were also exceptionally good. A variety called St. Helena was of a clear lavender colour, rather brighter than that found in the Neapolitan. All of these single-flowered Violets are of recent introduction. They are exceptionally strong growers, flowering very freely, as shown by the plants in pots staged at the same time, and of much use for autumn and spring flowering. *A. P.*

AN ELEVATED ORCHARD IN THE WEST.—"Pomona" (in issue *Gardeners' Chronicle* for November 13, under heading of "Enquiry"), will probably run the risk of only nominal drawbacks if planting as described at 600 ft. elevation in Gloucestershire, by making the choice of varieties as if there were no question of elevation at all to impose restrictions. I named in last week's issue, under "Yorkshire Apples" a selection of varieties for the neighbourhood of Hull, all of which would be desirable for Gloucestershire, and certainly Cox's Orange Pippin should not be excluded, nor Ribston neither, the Apples referred to being all dessert varieties. Amongst culinary Apples, all the large tried varieties, such as Early Rivers, Stirling Castle, Lord Suffield, Grenadier, Lord Grosvenor, The Queen, Bismarck,

MISCELLANEOUS PLANTS, &c.

The best collection of *Cyclamens* in pots was from Mr. W. Oarwood, Andover Nursery, Uxbridge; and the best group of twelve *Cyclamens* in pots (nurserymen excluded), was from Mr. W. Frost, gr. to S. ASHLEY DODD, Esq., Ashford, Kent; who was followed by Mr. W. Rapley, gr. to H. GAINING, Esq., Harrow Weald House, Stenmore. This latter exhibit was short of colour, otherwise it was little inferior in quality to the 1st prize exhibit.

Mr. J. Gibson, gr. to E. H. WATTS, Esq., Devonhurst, Chislewick, was 1st in the class for a collection of plants of *Primula sinensis* (open) with a very creditable exhibit. They were interspersed tastefully with pretty *Crotons* and graceful *Palms*.

The class for twelve *Primula sinensis* (nurserymen excluded) fell to Mr. W. Mease, gr. to H. TATE, Esq., Downside, Leatherhead, who was followed by Mr. Gisson.

A collection of flowering, berried, and foliage plants, arranged for effect upon a table, and shown by Mr. Gisson, deserved praise as being composed of pretty, well-grown specimens of the different species. Its only fault was due to an effort to include a greater number of plants in the space than there was need for.

For the best basket arranged with autumn berries and foliage there were as many as ten competitors, and the 1st prize was won by Mr. Newell, gr. to Sir E. SAUNDERS, Fairlawn, Wimbledon.

NON-COMPETITIVE.

There were many exhibits staged other than those for competition, and one of the most remarkable of these was a group of plants and cut blooms from Mr. W. WELLS, Earlswood Nurseries, Redhill. The group consisted of two elbows with a division in the middle, where a miniature lake, containing fish, was formed on the floor. Around this was a setting of moss with a few Ferns, and a bordering of cork. There were cork arches too, and some of the stands for the blooms were relieved with the same material. This style is hardly appropriate in the grouping of such plants as the *Chrysanthemum*, and, when adopted, it is necessary to secure excellent finish.

Mr. H. J. JONES, Ryecliff Nursery, Lewisham, filled a large table with blooms of many varieties of *Chrysanthemums*, inclusive of a number of novelties. They were well relieved by pretty foliage plants.

Messrs. H. CANNELL & SONS, Swanley, Kent, showed *Chrysanthemum* blooms, and something very much brighter, in their stand of sprays of *Pelargonium* flowers, which were very attractive. This firm also contributed some excellent vegetables.

Mr. W. J. GODFREY, Exmouth Nurseries, Devon, and Mr. R. OWEN, Maidenhead, contributed blooms of numerous varieties of *Chrysanthemums*.

Mr. J. R. CHARD, florist, Stoke Newington, had some pleasing floral arrangements; and a similar exhibit was staged by Mr. W. GREEN, Jr., Harold Wood, Essex, who showed excellent taste in the several designs.

A splendid exhibit of eighteen bunches of Grapes was made by Mr. W. Taylor, gr. to C. BAYE, Esq., Tewkesbury Lodge, Forest Hill, S.E. Mr. T. ROBINSON and Mr. W. NEVILLE contributed *Chrysanthemum* blooms; and Mr. BASIL, gr. to D. H. EVANS, Esq., Shooter's Hill, Pangbourne, a collection of vegetables.

ISLE OF WIGHT HORTICULTURAL IMPROVEMENT ASSOCIATION.

DECEMBER 4.—This Association held its monthly meeting at Newport, on the above date. Mr. J. GROVES presided over a large attendance of members; and Mr. C. MARTIN, Clarence House Gardens, East Cowes, read an excellent paper on "Codium, Caladiums, and Dracenas," which evoked an interesting discussion.

Mr. W. W. SHREATH, Macrocarpa, Ventnor, staged leaves of *Crotons* and *Dracenas* to illustrate the subject, and made a few remarks on the various methods of propagation and general cultural requirements.

Mr. J. H. SILSBURY staged a fine bloom of the *Chrysanthemum Julia Scaramanga*.

A PLEASURABLE INCIDENT.—On Thursday, December 2, Mr. F. Elliot, gardener to Mrs. W. L. Barclay, The Briars, Reigate, was, on the occasion of his marriage with Annie, daughter of Mr. T. Wortley, Beltham, Grantham, the recipient of a handsome marble clock, subscribed for by the workmen in the gardens of Lord Brownlow at Belton, where Mr. Elliot was foreman in the kitchen garden and forcing department for a period of five years.

MARRIAGE OF MR. ARCHIBALD FORBES, SON OF MR. JOHN FORBES.—At Marlfield, Hawick, on the 3rd inst., by the Rev. Charles Allan, M.A., assisted by the Rev. Duncan Stewart, M.A., Archibald Forbes, Buccleuch Nurseries, Hawick, to Eleanor Snowden, eldest daughter of Mark Currie, Esq. Mr. Forbes was, on the occasion of his marriage presented with a handsome barometer

from the nursery employes, Mr. W. Oliver, on behalf of the men, making the presentation. The office-bearers of Freemasons' Lodge, St. John, No. 111, met in the Crown Hotel, and presented the happy man with a beautiful silver salver, which was suitably inscribed. R. W. M., Brother James Barrie, in a feeling speech, made the presentation.



The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named: and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.					RAINFALL.		BRIGHT SUN.		
	Above (+) or below (—) the Mean for the Week ending December 4.	ACCUMULATED.				More (+) or less (—) than Mean for the Week.	No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
		Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.	Below 42°, difference from Mean since January 3, 1897.					
0	2	0	34	+ 205	— 24	1	210	40.0	17	29
1	3	0	43	+ 44	— 11	1	187	26.6	2	31
2	1	5	33	+ 103	— 99	4	170	22.6	21	33
3	2	5	35	+ 129	— 120	1	160	21.2	24	37
4	3	2	38	+ 66	— 131	2	160	24.3	26	35
5	2	10	29	+ 249	— 195	1	151	23.3	36	39
6	2	5	30	+ 129	— 58	4	302	40.7	30	32
7	2	6	26	+ 177	— 118	21	181	33.3	23	24
8	2	14	29	+ 259	— 138	2	187	37.9	32	33
9	1	10	29	+ 79	— 22	3	313	36.5	32	30
10	1	27	15	+ 221	— 92	2	300	42.4	34	33
11	1	20	0	+ 399	— 84	3	199	31.7	23	41

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending December 4, is furnished from the Meteorological Office:—

"The weather was very unsettled and squally during the earlier half of the period, with considerable falls of cold rain or sleet in all the northern parts of the kingdom, and of rain or hail, and occasional sleet elsewhere. The rainfall was especially heavy in the north-west of England, and North Wales. Towards the end of the week the conditions became finer and drier over the more southern districts, but continued changeable, with frequent rain elsewhere.

"The temperature was below the mean, the deficit ranging from 1° in 'Ireland,' the 'Channel Islands,' and 'England, N.E.,' to 3° in 'Scotland, E.,' and the 'Midland Counties.' The highest of the maxima were recorded during the earlier part of the week, and ranged from 55° in the 'Channel Islands,' and 64° in 'England, S.W.,' to 47° in 'Scotland, N.,' and 'E.' The lowest of the minima were registered either on December 3 or 4, and ranged from 19° in 'Scotland, E.' (at Braemar), and 20° in 'England, E.' (at Rothamsted), to 27° in 'Ireland, S.,' and to 37° in the 'Channel Islands.'

"The rainfall was rather less than the mean in 'Scotland, N. and W.,' as well as in 'England, S. and S.W.,' but more in all other districts. In 'England, N.W.,' the fall was nearly four times as much as the mean. The greatest aggregate falls for the week at any individual stations were 3.21 inches, at Llandudno, and 3.12 inches at Manchester.

"The bright sunshine exceeded the mean in all districts except the 'Channel Islands.' The percentage of the possible duration ranged from 36 in 'England, S.,' and 34 in 'Ireland, S.,' to 20 in 'Scotland, E.,' and to 17 in 'Scotland, N.,"

MARKETS.

COVENT GARDEN, DECEMBER 9.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. No.]

OUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Arums, 12 blooms...	4 0-6 0	Mignonette, da. bn.	2 0-4 0
Bouvardias, pr. bun.	0 4-0 0	Orchids:—	
Carnations, pr. doz.	1 0-3 0	Cattleya, 12 bns.	6 0-9 0
Chrysanthemums,		Odontoglossum	
— p. doz. blooms...	0 6-2 6	crispum, 12 bns.	1 6-3 0
— p. doz. bunches...	3 0-6 0	Pelargonium, scar.	
Eucharis, per dozen...	4 0-6 0	let, per 12 bun.	4 0-6 0
Gardenias, per doz.	2 0-3 0	— per 12 sprays...	0 5-0 8
blooms ...	2 0-3 0	Pyrethrum, per 12	
Hyacinth, Roman,		bunches ...	1 6-2 6
dozen sprays ...	0 6-1 0	Roses, Tea, per doz.	0 6-1 0
Lilac, French, per		— yellow (Pearls),	
bunch ...	3 0-4 0	per dozen ...	2 0-4 0
Lilium Martini, per		— pink, per doz.	1 6-2 6
doz. blooms ...	4 0-6 0	— Safrano, p. doz.	1 0-2 0
Lily of the Valley,		Stephanotis, dozen	
dozen sprays ...	1 0-2 0	sprays ...	4 0-6 0
Maidenhair Fern,		Tuberose, 12 blms.	0 2-0 4
per 12 bunches ...	4 0-8 0	Violets, 12 bunches	1 6-2 0
Marguerites, per 12		— Parme, French	2 6-3 6
bunches ...	2 0-4 0	White Narcissus	
		French, 12 bun ...	9 0-1 6

ORCHID-BLOOM in variety

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Adiantum, per doz.	4 0-12 0	Evergreen shrubs,	
Aspidistras, per doz.	12 0-30 0	in variety, doz ...	6 0-24 0
— specimen, each	5 0-15 0	Ferns, small, doz ...	1 6-2 0
Chrysanthemums,		— various, doz.	5 0-12 0
— p. doz. pots ...	5 0-9 0	Foliage plants, per	
— specimen, or		dozen ...	12 0-36 0
large plants, ea.	1 6-2 6	Liliums, various,	
Dracenas, each ...	1 0-7 6	per dozen ...	12 0-18 0
— various, p. doz.	12 0-34 0	Marguerites, p. doz.	6 6-9 0
Erica, various, per		Mignonette, p. doz.	4 0-6 0
dozen ...	9 0-18 0	Palms, various, ea.	2 0-10 0
Ficus elastica each	1 0-7 6	— specimens, ea.	10 6-34 0

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Apples (Blenheim		Grapes, Muscates,	
Orange), se-		"Cannon Hall,"	
lected, per		per lb. ...	3 6-5 0
bushel ...	7 0-10 0	— Muscates, se-	
— (Wellingtons),		lected, per lb. ...	3 6-4 0
selected, bush.	9 0-11 0	Nuts, Cobs, per	
— ordinary qual.		100 lb. ...	31 0-22 6
per bushel ...	2 6-5 0	Pine-apples, St. Mi-	
Grapes, Gros Col-		chael, cases con-	
mar, per lb. ...	1 6-2 0	taining 6 to 8	
— 2nd qual., lb.	1 0-—	each ...	2 6-3 6
— Alicante, p. lb.	1 6-1 9	— cases contain-	
— 2nd quality		ing 10 to 12 ea.	1 0-1 6
per lb. ...	0 10 1 0		

VEGETABLES.—AVERAGE WHOLESALE PRICES.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe,		Mushrooms (Indoor)	
per doz. ...	4 0-4 6	per lb. ...	0 6-0 8
— Chinese (Sta-		Onions (pickling),	
chystuberifera),		per pocket ...	2 0-3 0
per lb. ...	0 3-0 4	— Dutch, per bag	3 0-3 6
Asparagus (Paris),		— Albanian, per	
Green, p. bdle.	4 0-5 0	bag ...	4 6-5 0
Beans (Madeira),		Radish (long scar-	
per bush (about		let), Channel	
6 lb.) ...	2 0-2 6	Islands, per 12	
— French, Chan-		bunches ...	0 6-0 8
nel Islands, lb.	1 0-1 3	Salad, small, per	
Beetroots, p. bush.	1 3-1 6	doz. punnets ...	1 6-—
Capicium, Chili, p.		Seakale, per punnet	
100 ...	1 6-—	(3 to 4 lb.) ...	1 2-1
Cauliflowers, per		Shallots, per lb. ...	0 2-—
dozen ...	1 9-2 0	Sprouts, per 4-	
Cucumbers, home-		bushel ...	0 6-0 9
grown, select,		Tomatoes, Canary	
per doz. ...	7 0-8 0	Islands, per	
Garlic, per lb. ...	0 2-—	case, 40 lb. ...	14 0-—
Horseradish (Ger-		— 14 lb. ...	4 0-5 0
man), per bundle	1 0-1 3		

POTATOES.

Trade slow, arrivals somewhat lighter. No advance in prices. Up-to-dates, 85s. to 115s.; Maincrop, 80s. to 100s.; Saxons and Bruce, 80s. to 95s.; Blacklands, 70s. to 80s. per ton; Belgian and Dutch Ware, 3s. to 8s. 6d.; German Ware, 3s. 3d. to 5s. per bag. John Bath, 32 and 34, Wellington Street, Covent Garden, W.C.

SEEDS.

LONDON: December 8.—Messrs. John Shaw & Sons, Seed Merchants, of Great Maze Pond, Borough, London, S.E., write that although to-day's seed market was well attended, the business passing was confined to very narrow limits. Indeed, just now no disposition whatever is shown to purchase either Clover or Grass seeds. There is no change in either Tares or Rye. Full prices are asked for Mustard and Rape seed. Blue Peas and Haricot Beans show no alteration. As regards Hemp, Canary, and Millet seeds, the transactions passing are on a meagre scale. Fine new Scarlet and White Runner Beans offer on tempting terms. The new Spanish Lentils come cheap and good. Linseed is steady.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 18, 1897.

A FRENCH GARDEN IN 1545.

I HAVE just met with a little book of 140 pages, entitled, *De Re Hortensi Libellus*. It is written, and dedicated to his "little grandson" (Nepotulus Henriculus), by Carolus Stephanus, because his "little Henry," when quite young (*tenellus*), had been devoted to flowers. He sends his *Hortulus* to him to refresh his mind and eyes when wearied with his daily studies.

He commences by giving a supposed origin of the word *hortus*, and some account of the gardens of the ancients, mainly taken from Pliny, in which were principally Cabbages and root-plants, such as Carrots, &c., as well as pot-herbs and kitchen-herbs; or else the gardens were planted with trees overhanging shady walks. He also alludes to the "hanging gardens" of the ancients, which were made on the tops of arches. He then proceeds to give descriptions of all the plants to be grown, first mentioning the wild plants which come up spontaneously in a garden, such as Ivy, pellitory of the wall, the "yellow Violet" or Wallflower, Celandine with its yellow juice, Houseleek, Polypody, Adiantum and Asplenium, &c. Then follows a description of hedge-plants, in which *Oxyacanthos* still stands for Barberry, as in the fourteenth century; the Privet, Dog-rose, three kinds of *Rubus*, *Rhamnus*, i.e., Gooseberry, &c.

Walks, open and protected, are next treated of; and the author alludes to the roofing with the "specular" stone of the ancients, in other words to mica, which Pliny says rarely exceeded a few feet in length. Of plants used for trellises, and to arch over the pathways, he speaks of the Vine, Rose, Briony, white and black (*Tamus communis*).

Next comes the proposed arrangement of the flower-beds or *Areae*, each being devoted to some special kind of plant. The first is *Area coronalis*, i.e., for such plants of which the flowers were used for garlands and bouquets; 2nd, *Area odorata*, containing plants with scented flowers, leaves, or roots; 3rd, *Area olitoria*, including one bed for salad-plants, another for condiments; 4th, *Area escaria*, for vegetables; 5th, an *Area* for vegetable-fruits; and 6th, for root-crops.

Each of these *Areae* is treated in full, and all the plants usually cultivated are described in detail, as follows:—

Area coronalis.—Of scented flowers used for wreaths, the author describes the White Stock, Wallflower, Violet, Dame's Violet, Betony, *Narcissus biflorus* and *N. poeticus*, Marigold, *Baccharis*, a Boraginaceous plant, apparently *Anchusa*; Lilies, white and red, probably *L. Chalcedonicum*, the Lily of the Valley, Iris

Pseudacorus, and *I. Florentina* "with a more highly-scented root and white flowers."

Of plants without scent are Columbine, *Amaranthus*—the Coxcomb was apparently unknown in the sixteenth century, though Gerarde's figure looks like a commencement of fasciation—*Flos Jovis*, which the author translates by "*Des coquelourdes*," i.e., Pasque flowers, *Anemone Pulsatilla*; but others take it to be a *Lychnis*; *Petilius*, a flower unknown to him, commonly called "Belueder" by the Italians, and in France "*Oeillets d'Inde*." It is named from *Petilius*, a town of Lucania, an autumnal flower "with a striated calycul, resembling a Rose." The plant grows to a great height, and dies yearly. This reads like a Holyhook. *Flammea*, or lesser Pansy; *Consolida minor* or "*Marguerites*," i.e., the cultivated form of the Daisy.

Area odorata.—This should contain *Artemisia abrotanum* or Southernwood, *A. absinthium*, *A. ponticum*, &c.; *Galeopsis*, which appears to be *Leonurus Cardiacus* or Motherwort; *Amaracum*, *Maiorata* or *Sampsychus*—these three names referring to one plant. *Matthiolus* in his commentary on *Dioscorides* (ed. 1560), figures *Marjoram*; *Galen*, our author adds, regarded it as *Parthenium* or *Matricaria*, and he gives the French name "*Espargoutte*" or Feverfew. The author, however, alludes to the difficulty of unravelling the various names of the ancients. *Calamintha*, commonly called *herbe-au-chat*; i.e., Catmint, *Nepeta Cataria*; another kind being *Nepeta*, but he admits the confusion; for this last is the Catmint. Three kinds of *Marjoram*: viz., *Heracleoticus*, *Onitis*, and the wild *Marjoram*; *Matthiolus* figures all three kinds; *Mentha*, or different kinds of Mint; *Costus hortensis*, "*du Coq*," our *Costmarie*, *Pyrethrum tanacetum*, from south Europe. *Hyssopus*, *Nardus celtica* or Lavender; *Ozimum* or basilicon, Balm; *Ocymastrum*, the *Acinos* of *Dioscorides*, wild balm, *Salvia*, Sage, *Satureia* or *Thymbra*, Savory; *Rue*, Tansy, *Chamomile*, *Thyme* and *Epithymum*, i.e., *Cuscuta* or Dodder parasitic upon it. *Prasium*, two kinds, viz., *Horehound* and *Ballota nigra*; *Stachys*, called Mountain Sage; *Melissophyllum*, probably *Melittis Melissophyllum*, *Bastard-Balm*; *Orminum*, in Fr. "*Toute-bonne*," our *Clary*, *Salvia*; *Verbenaca* and *Anethum*, Dill. *George Henslow*.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

MARATTIA BURKEI, *Hort. Veitch* (fig. 129, p. 435).

THIS Fern was exhibited lately at the Drill Hall, at one of the fortnightly meetings of the Royal Horticultural Society, and received a Certificate. It was collected by the late Daniel Burke (after whom it is named), whilst travelling for Messrs. Veitch. The native country is not known with certainty, but as he spent some time in Columbia, and its affinity with *M. alata*, Smith, is very close, it is most likely that it inhabits that part of the world. At present it is only in an undeveloped state, so that its botanical position is uncertain. The following provisional description was made from a living specimen:—

Stock stout, prickly, green, above a foot long, without any scales. Frond square, tripinnate, above a foot long and broad, bright green and glabrous on both surfaces. Pinnae in four opposite pairs without one at the end of the main rachis, oblong, the lowest pair smaller than the others. Pinnules crowded, lanceolate, ten- to twelve-jugate. Tertiary segments oblong, sessile, obtuse, the longest 1½ inch long, deeply regularly crenate, unequal at the base. Veins distinct, simply erecto-patent, running from the midrib of the segments to the end of the lobes. Sori not yet developed. *J. G. Baker*.

ORCHID NOTES AND GLEANINGS.

COMPARETTIA MACROPLECTRON.

PLANTS of this pretty species are now flowering, in pans containing ten or more plants, in the warm Orchid-house in the Botanic Garden, Edinburgh. The pendulous, many-flowered racemes have rose-coloured sepals and petals, are much speckled with red, and the flowers are the largest of any of the genus. Although the spur appears outwardly single, it really consists of three, the two from the labellum being inside the larger one from the united lateral sepal. The leaves are about 5 inches long, and rusty-coloured on the under surface. The plant requires at this season scarcely any water, but a fairly liberal quantity is necessary when the plant is growing, as the scanty compost used must be well drained, and open. This species is a native of Columbia, and was introduced in 1878. *R. L. H.*

LÆLIA AUTUMNALIS DELICATA.

A fine inflorescence, bearing three flowers, of the large type of *Lælia autumnalis* known as *atrorubens*, but differing from it in having white flowers very slightly tinted with the most delicate flush of rose colour, is sent by Frau Ida Brandt, Brunnenhof, Riesbach, Zurich (gr., Mr. Schlecht). The disc of the lip bears the usual pair of raised lines, but of a very pale yellow tint, and the apex of the column is tinted with light rose. The greater part of the white or nearly white varieties in cultivation are of the old type of *L. autumnalis*, plentiful in gardens many years ago, and which made the *L. a. atrorubens* and its varieties on their arrival more welcome than many of the new species.

CALANTHES, &c., AT SHERFIELD MANOR, HANTS.

In the gardens at Sherfield Manor at present is a grand show of *Calanthes*; the three varieties are *C. Veitchi*, *C. vestita rubro-oculata*, and *C. v. lutea*, on which some hundreds of flower-spikes are in full beauty. In one of the houses the *Calanthes* are mixed in amongst a number of very fine plants of *Adiantum Farleyense*, with a pretty effect; and in another the white *Calanthes* are mixed with *Poinsettia pulcherrima*, offering a brilliant effect; and lastly, *Calanthes* were mixed with capital plants of *Codæums*, *Dr. cœnas*, and other stove plants, with much good taste. The *Calanthes* are potted in 4 and 5-inch pots, in a mixture of loam, peat, sand, and a small quantity of dried cow-dung. The spikes vary from 4 to 4½ ft. in length, and carry from thirty to forty blooms on a spike. One pseudo-bulb only is planted in a pot, and they have made some two or three pseudo-bulbs, and each has flowered. The blooms are so large and thickly placed that they almost overlap one another; and the stems being strong need no stakes for support. Mr. Wasley, the head gardener at Sherfield Manor, is a good cultivator of other choice plants, many of which may now be seen in fine groups of *Bouvardias*, *Cyclamens*, tree *Carnations*, zonal *Pelargoniums* in full bloom, *Primulas*, *Cinerarias*, and many others. Sherfield Manor is the residence of J. B. Taylor, Esq., and is at the present time undergoing considerable alterations in the mansion and grounds. *J. W. McHattie, Strathfieldsaye*.

TREES AND SHRUBS.

CUPRESSUS MACROCARPA LUTEA.

THIS is a new Conifer of recent introduction, which will, when known, scarcely fail to become one of the most useful variegated forms of the Cypress. Its style of growth and general contour are so striking that few people who have seen it fail to take a second glance, as its bright golden colour is more brilliant than that of *C. Lawsoniana lutea*, which has hitherto been one of the best; while, like the type, it possesses that delightful fragrance, which to most people is one of its characteristics. The typical species, *C. macrocarpa*, the *C. Lambertiana* of some botanists, is a native of South California, from whence it was introduced to this country in 1847.

Few large specimens are met with in this country, owing to the difficulty of transplanting, their coarse and wiry roots being a great drawback, consequently they have to remain where first planted. Some fine specimens can be seen in the neighbourhood of Woking, one especially over 20 feet high, in Brookwood Cemetery, being well furnished, and beautiful in appearance, while several smaller trees can be noticed in the same place. Now that a variegated form has been produced, it may cause both of these handsome trees to be more extensively planted than hitherto. *E. S., Woking.*

DIPANTHUS CERCIIDIFOLIA, Maximowicz.

It is over thirty years since Maximowicz described this shrub, but it has, so far as English gardens are concerned, been almost or quite unknown till within the last few years. At the beginning of 1893, seeds of it were received at Kew from Professor Sargent, of the Arnold Arboretum, Mass., which he had gathered during his then recent travels in Japan. These seeds were sown at the time they arrived, but remained dormant for over three years, a single seed germinating in May, 1896. This fact may be worth recording for the benefit of those who have obtained, or may obtain, seeds of this shrub from Japan, for judging by this autumn's experience, it appears likely to make a valuable addition to hardy shrubs. Professor Sargent says that in the autumnal colour of its leaves it was one of the most beautiful shrubs he saw in Japan, and it was this character which made the small plant at Kew so noticeable a few weeks ago. With the possible exception of *Rhus coccinoides*, it was the most striking in its autumnal colouring of any tree or shrub at Kew this year, the leaves assuming, before they fell, a rich claret colour. It is said to grow 8 feet to 10 feet high, and the leaves are 3 inches long, the same in width, and broadly ovate with a cordate base. The plant is aptly named, for the foliage greatly resembles that of the Chinese Red-bud (*Cercis chinensis*); it belongs, however, to the Witch-Hazels (*Hamamelis*), and judging by the figure in the *Forest Flora of Japan*, its flowers are very similar to those of that family. They appear in October, are dark purple, and are borne in pairs, back to back as it were, on slender stalks, the corolla consisting of five narrow, pointed, crooked petals. There ought to be no great difficulty in obtaining this shrub in quantity. Sargent says it is not rare in the valley of the Kiso-gawa, in Central Hondu, where it is sometimes seen covering hillsides with thickets a quarter of an acre in extent. Of its hardiness in this country little can be said at present. *W. J. B.*

Pinus flexilis.

In the *Gardeners' Chronicle* for September 18, 1875, there is a figure of the cones and leaves of this Pine, drawn by Mr. W. G. Smith from an imported specimen of Roessl's, together with a note on the species by Mr. A. Murray. But since that time little seems to have been heard or written about it. Even the *Report of the Conifer Conference* (1892) contains no reference to specimens growing in Britain, although Mr. Murray observed that it had been abundantly introduced to this country during Jeffrey's time as a collector and subsequently. There is a group of trees in the Pinetum at Kew (near the Ialeworth Ferry Gate), which shows the species to be by no means one of the least handsome of the Pines. The largest are about 25 feet high, and one is now bearing several cones. It is a tree of distinct appearance, having leaves about 3 inches long, produced in bundles of five, the younger ones appressed to the stem as in *P. Balfouriana*; in transverse section the leaf is triangular, and the two inner faces are striated with glaucous lines. The branches are long and slender, and their curving upwards, especially towards the ends, is one of the distinctive characters of the tree as represented at Kew. The cones are 3 to 4 inches long. According to Murray, who saw it wild on the Rocky Mountains and the Sierra Nevada, it varies greatly in stature and habit. High up the mountains, where it is exposed to the coldest blasts, "it is," he says, "reduced to a trailing shrub 1 or 2 feet high, wandering over the ground, and with its foliage so

densely packed that a man could almost walk over it." At lower altitudes, and under more clement conditions, it attains the size of the Scotch Pine in this country. The specimens at Kew are quite erect, clean-grown, and symmetrical. *W. J. B.*

ELÆAGNUS MACROPHYLLA.

In gardens where the soil is impregnated strongly with lime, and the satisfactory cultivation of Rhododendrons and other Ericaceous plants consequently difficult and expensive, the choice of hardy evergreens becomes greatly limited. As this shrub is comparatively little known—although in some respects the most striking of the evergreen *Elæagnus*—it may be worth while to draw attention to it here. I have only had experience with it in the London district, but here it is of undoubted hardiness, having stood outside at Kew without shelter or protection during the last ten years at least. It may at once be distinguished from the other hardy evergreen species by the shape and size of its leaves, which are larger than in any of the others; they are 3 to 4 inches long, broadly ovate-oblong, and on the upper side are of a dark and glossy green, whilst beneath they are of the peculiar metallic, silvery-grey colour common to many species of *Elæagnus*. It succeeds well in the extreme south-west of England, where large specimens are occasionally to be seen. It flowers there, apparently, more freely than it does near London, a large bush at Kew, 6 feet high, never having flowered as yet. In Messrs. Veitch's nursery at Coombe Wood, however, I saw it in bloom during November, both last year and this, but the plant is growing against a wall. The flowers are shaped like tiny Fuchsias, and are of the same colour as the under-surface of the leaves; their most charming character is the delicate Gardenia-like odour. It is a native of China and Japan. *W. J. B.*

APPLE DUMELLER'S SEEDLING.

WHEN recently looking through one of the gardening periodicals, published in the year 1850, I came across some particulars relative to the origin of this well-known Apple, which may have an interest for many readers of the *Gardeners' Chronicle*, as they amplify the details given in *Hogg's Fruit Manual*. It was raised by a Mr. Richard Dumeller, farmer, then residing at a farm-house known as Hop John's Hill, in the parish of Swepton, Leicestershire, about three miles south of Ashby-de-la-Zouch. Mr. Dumeller removed from this farm to one at Shuckstone; and, eventually, the farm passed into the hands of a Mr. Richard Spencer, and with it the original tree, which was in a flourishing condition fifty years ago. The writer of the article from which I am quoting, a Mr. Timothy Brown, says, "When a youth, I was sent by father to Hop John's Hill, to obtain grafts from Mr. Dumeller's tree, to work in my father's nursery. The tree had at that time a bole of about the thickness of a person's thigh, and showed slight symptoms of canker, to which it is liable when grown on a cold substratum." Mr. Dumeller appears to have taken pleasure in supplying grafts of his Apple, calling it his "Pippin," meaning in his mind that it was raised from a pip. It had the name Normanton Wonder attached to it in this way:—"Mr. Hesfield, a market gardener, residing at Normanton-on-Soar, was a native of Packington, and occasionally visited his friends at that place. Mr. Walker, a nurseryman, of Packington (which is within a mile of Hop John's Wood), worked the Apple largely, and sold it very freely. By him it was supplied to Mr. Hesfield, of Normanton, and the probability is that this handsome and useful variety soon became popular in certain markets, to which it was supplied from that locality, hence its new name.

In his *Fruit Manual*, Dr. Hogg tells us how it came southwards. "It was first introduced to the neighbourhood of London by Mr. Richard Williams, of the Turnham Green nurseries, who received it from Gopsall Hall, the seat of Earl Howe, who presented specimens of the fruit to the London Horticultural Society in 1820. It was with him that it received the name of Duke of Wellington, subse-

quently shortened to Wellington, and by which only it is now known in the London markets." It would therefore appear that the proper name of this valuable late variety is Dumeller's Seedling, though we have it on the authority of Dr. Hogg that the name is locally pronounced Dumelow. *R. Dean.*

TRADE NOVELTIES.

MESSRS. R. VEITCH & SON, Exeter, are sending out a new Melon, "Taunton Hero," which they claim to be the best white-fleshed Melon in cultivation. The shape is globular, lightly netted, and the colour golden-yellow. In heat it attains a weight of 5 to 6 lb., but in a hot-bed frame an average weight of 4 lb. is attained.

The same firm announce a new Cucumber, Veitch's Western Wonder, embodying, says the raiser, the colour of True-and-Tender, the quality of Lockie's Perfection, and the hardiness and fruitfulness of Telegraph.

Veitch's Earliest-of-All Cabbage is recommended for spring sowing, and received an Award of Merit at the Royal Horticultural Society.

ROIROIRE PÈRE ET FILS, LYON:—

Begonia semperflorens, Vernon.—Leaves with the golden-yellow foliage of Bijou, but each leaf is bordered with a dark red band.

Lobelia Rivoirei.—Flowers clear, rose-coloured. Perennial. It does best in the open ground. The seeds germinate with difficulty, and should not be covered with earth.

HERB & WULLE, NAPLES:—

Corydalis rotundifolia.—Flowers carmine.

Galanthus cilicicus.—A very early-flowering variety.

Iris persica Vogeliana.—Flowers silver-grey, with a large claret-coloured spot, but colour said to be variable.

Ornithogalum Hausknechti.—Spring-flowering. Flowers white.

Ornithogalum libanoticum.—Similar to the preceding, but earlier.

Tulipa pulchella.—A dwarf variety, with deep carmine colour.

J. C. SCHMIDT, ERF. ET:—

Earliest Iron-head Savoy.—"Large, tender, firm."

Erfurt Marrow.—Dwarf French Bean.

Miracle Pumpkin, "with stainless pits."—Fruits dark green, striped with yellow.

The Strawberry-Raspberry.

Sweet Pea Cupid.—Rose and white.

Campanula mirabilis.

Petunia Favourite.

Petunia Venus.

Begonia semperflorens, Zulu King, &c.

C. LORENZ, ERFURT:—

Cucumber Table Queen.

Frame Cucumber, Old Chancellor.

Heliandrus, Golden Bouquet.

Ageratum, Blue Perfection.

Gloxinia Galatea.

LÆLIO - CATTLEYA CLIVE (C. DOWIANA ♀, L. PUMILA (P. TANS) ♂).

THIS, one of the handsomest of the compact-growing hybrids, was raised by Norman C. Cookson, Esq., Oakwood, Wylam, Northumberland (gr. Mr. Wm. Murray), and first exhibited by him in 1893. At that time there was some confusion caused by the idea entertained by some that *Lælia Dayana*, now admitted to be a distinct species, was only a variety of *L. pumila*, and hence the interference that *L. C. Clive* could differ only in a slight degree from *L. C. × Ingrami* (*L. Dayana* ♀, *C. Dowiana* ♂). Time has, however, proved to the contrary, as was well demonstrated in the plant exhibited by the Right Hon. Joseph Chamberlain at the Royal Horticultural Society on November 23, 1897, which forms the subject of our illustration (fig. 126, p. 427). The sepals and petals are bright rose-coloured, the former rather the lighter. The lip rich maroon-purple, with golden-yellow base, bearing some fine reddish markings.

METHODS OF PROPAGATION.

(Continued from p. 390.)

BERBERIS FROM SEED. — Persistent shrubs are raised from seed as well as provided by the various methods I have indicated in papers, the seed, in some cases, needing no attention, in others calling for it. *Mahonia aquifolium* produces its purple Grape-like fruits in abundance, and blackbirds, thrushes, and other birds are partial to them. The seeds pass unaltered through the stomachs of these birds, and numerous young plants may generally be found growing in the open, the covert, bed, or border planted with any of shrub. This is also the case with another useful covert shrub, *Leycesteria formosa*, the fruit of which is eaten by the larger wild birds, as

timber tree in the south and west of Ireland. The fruit is edible, and much liked by thrushes and blackbirds, so that in hard winters few are left on a tree. It is prudent to gather the fruits when ripe and soft, rubbing them in sand, and sowing the seed forthwith in pans or boxes, which must be kept close in a cold pit, when it will germinate the following year. The seedlings, when they have acquired a few true leaves, should be pricked off into boxes or pots, about ten in a 48-sized pot, kept close, and shaded for a few days, and when established, plunged in the open in ashes or spent tan; but in the north and the midlands they will require protection by mats or straw coverings in the winter while young. A few should be potted singly in thumb-pots, as *Arbutus Unedo* forms the stock upon which the various hybrid forms as *Rollin-oni*, as

seedlings may be lined out in nursery-beds in the autumn. There is always a demand for this shrub in seaside towns, as coming from both the European and African shores of the Mediterranean, as well as from Corsica and other islands in the same sea, it loves the sea spray.

A capital plant for contrasting with it is the shrubby *Orache*, *Atriplex Halimus*, with pretty foliage covered with a silvery sheen, but it rarely flowers with us, and still more, seldom fruits, but it is freely propagated by means of cuttings. Both of these shrubs, if left to themselves, and not crowded together, form dome-shaped bushes, and are useful to decorate banks sloping to the sea. The *Mezereum*, *Daphne Mezereum*, also requires the fruit to be cleaned in this manner, and the seed sown at once in the seed-bed. This shrub has a trick of germinating so unevenly that by sowing a large bed of it, the young plants will keep appearing for some months. Besides being a pretty, early, or winter-flowering shrub, it quickly makes a stock for *Daphne indica* and other evergreen species, and some of the seedlings should be potted for inside grafting. But though so used, it is not a permanent stock, for being deciduous, the majority of the evergreen *Daphnes* do not take kindly to it, and it is preferable to make use of the *Spurge Laurel*, *Daphne laureola*. Some of the fruiting shrubs are best raised from "potted" seed, which process was described in treating of raising the Hawthorn and other trees from seed. *Experience*.

(To be continued.)

GATESIDE.

THE country residence of Mr. McQueen is situated in the parish of Dryman, at the base of the southern slope of Ben Lomond, and within a short distance of the queen of Scottish lakes, on which the steamers, with their freights of tourists from all parts of the civilised world, can be seen passing to and fro. The house was built by its present owner about nine years ago.

Being built with the red sandstone of the district, it harmonises well with the purple Heather on the side of the mighty Ben during the months of July, August, and September. And to the casual visitor it seems rather strange to be standing amongst plants brought from all quarters of the earth, and admiring the progress they have made; and to see how in a short time man can change the aspect of almost anything. And yet within a stone's throw of all this grandeur the wild Heath is going. And should you turn your face towards the north, there before you is some of the wildest scenery in Scotland, right in front is Ben Lomond; and to the right is Ben Venue; then, a little further east is Ben Ledi and Ben Aon; while to the west can be seen the far-famed pass of Balmaha, where, when once through, Rob Roy and his followers considered themselves safe from their natural enemy, the Duke of Montrose, when they had been helping themselves to some of His Grace's grain or cattle, or relieving the factor of the rents collected for the Duke.

On entering, at the main entrance off the Gartness Road, one immediately conceives the idea that one is about to see something of no mean order. On each side of the carriage-drive is a fine row of Lime trees, about 24 feet back from the gravel. Then in front of that is an assortment of Conifers, with a nice, well-kept verge of grass in front. On winding our way up the drive, we were fortunate to meet Mr. George, the enthusiastic gardener, who gave us a hearty welcome, and then proceeded to show us over the place. We first visited the glasshouses, and the first two we entered were devoted to zonal *Pelargoniums*, where all the finest varieties of the day are grown. It seems Mr. George's practice to obtain all the new varieties as they come out, and to weed out a corresponding number of old stock, with the result that his houses afford a treat worth going far to see. There were also some very fine seedlings raised by Mr. George. The Vines were carrying fine crops of Grapes. Muscats seem to do very well. The soil is a sandy loam, with a gravelly subsoil on the red sandstone.

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FIG. 126.—LÆLIO-CATTELEYA, CLIVE.

(Lip maroon-purple, yellow at the base. From a plant exhibited by the Right Hon. J. Chamberlain. See p. 426.)

as by pheasants and other game birds, and plants may always be found in woods and a where it is planted. The nurseryman, however, trust to Nature to furnish him stock, and so the berries of both these plants are thered, and rubbed in sand to dispose of the seed skin, and the seeds are then sown in beds. The young seedlings should be transplanted as soon as large enough, this treatment being the same with *Mahonia*, as it makes coarse and woody roots, with little fibre, and transplants badly kept moved. *Berberis dulcis*, as well as the noble *Mahonia japonica* (Bealei), are raised from seed rubbed out in sand from the ripe fruit and either sown in pans or boxes, or directly in the open. The *Arbutus*, or Strawberry-tree, it gets to maturity, fruits freely in this way, and attains to the dimensions of a small

well as for the handsome scarlet-flowering variety, are worked. These require a practiced hand to graft, the bark being very thin; and it is safer to carry out the operation under glass.

All soft fruits require the same kind of treatment, as to divesting the seed of the surrounding pulp, and often tough skin, as it accelerates germination.

Among climbing plants, the Honeysuckles are best so treated, the sticky pulp being rubbed from the seed, and the latter sown without delay in propagating-pans or boxes.

Bupleurum fruticosum with foliage and flowers having the scent of Ivy, and when in blossom in the autumn attracting swarms of Hover flies and blue-bottles, fruits generally freely in the south and west of England, and can be easily raised from seed, which, if sown in the open ground as soon as ripe, will germinate the following year and the

fertile tracts, hedge-row timber and small woods are chiefly represented. These circumstances all aid in rendering our landscapes more attractive if properly attended to, for there is little doubt that a large plantation is more in keeping with the idea of extensiveness which a hilly country conveys than a small one. Small clumps of trees dotted about a hill-side without any apparent reason are never natural, and more often than not destroy those lights and shades which occasional elevations and depressions in the surface give to a hilly landscape when viewed from a distance.

On hill-sides plantations should either be sufficiently large to form a distinct feature in the land-

land inside the boundary fence, no doubt prevents planters from imitating Nature too closely in this respect, but a great deal may be done by a little variation in the species near the boundary. Birch, Willow, Juniper, &c., mixed with the larger forest trees, all help to form an irregular margin, and occasional spots left unplanted here and there, or planted only in a partial manner, assist in the same direction.

On flat ground, this breaking up of the margins, if less important in its effect upon the landscape in general, still improve the appearance of a wood considerably. It is easily effected by freely thinning the margins at an early age, and leaving clumps here and

star which directs their operations. If so, then let us have ornament in its highest sense, and give up the idea that the mere use of what the nursery trade has styled "ornamental trees and shrubs" for the sake of convenience, necessarily make an ornamental plantation or landscape. Indigenous forest scenery in Britain may not come up to that of many continental types in the opinion of many persons, but it has at least a character of its own; and it is useless to attempt to improve it by creating a mongrel form of scenery by methodically mixing it with species of a totally different type. In our opinion, plenty of room exists for ornament, profit, and sport in the woodlands of any average estate, but we cannot have all three treading on one another's toes, as is usually the case at present. Turnips and Potatoes are not usually grown in a flower garden, although the land devoted to both may lie within the same boundary-fence. In the same way, no difficulty exists in the way of growing ornamental trees (or groups of trees), game cover, and clean marketable timber on an area of 50 or so acres, but we must make up our minds as to the extent of ground we are going to devote to each at the start and keep to it. Character and variety are what we chiefly want in woods or anything else, and these cannot be obtained by mere chance or accident. *A. C. Forbes.*

(Concluded from p. 31.)

FOREIGN CORRESPONDENCE.

CHRYSANTHEMUMS AT STUTTGART.

THE great strides which the cultivation of the Chrysanthemum has made in Germany during recent years was particularly exemplified at the exhibition held at Stuttgart a few weeks ago, as also the great interest taken by all classes of the public in the same.

The number of visitors, including the Royal family, who paid the show a prolonged visit, was very large, and the same may be justly considered as one of the best and largest yet held in Germany.

The "Gewerbehalle," the centre of last year's industrial exhibition, with its large fountain, was, as if by magic, turned into a beautiful flower garden, the background and side-walls being decorated with Christmas Trees (Abies) and Palms; whilst in the body of the hall, as a relief to the vivid colours of the Chrysanthemums, six fine specimens of *Chamærops excelsa*, in tubs, about 10 to 12 feet high, with a small underground of Laurels and Euonymus, were introduced with great advantage.

On the whole the exhibits were good, especially those of Messrs. Pfitzer, Ernst, Ulrich, and Bofinger.

Mr. Ulrich, who has done the most in the last few years to popularise the Chrysanthemum in Stuttgart, must be placed at the head of the list of exhibitors, his standards, half-standards, and specimen plants, as well as cut blooms, being the nearest approach to the English ideas of any in the show. And then his floral arrangements (of Chrysanthemums only) from the hands of Mr. Aug. Herrmann, one of the best modern exponents of the art of wreath-making and floral decorating in Germany, were unsurpassed.

Mr. Pfitzer staged a grand collection of about ninety of the best varieties, old and new, affording the nurseryman and amateur ample opportunity of studying and comparing them as to habit and colour. His collection from summer-made cuttings, in about seventy varieties, with only one bloom each, consisting of mostly new sorts, was also very fine.

Last, but not least, I must particularly mention Mr. Bofinger's specimen plants, which were a relief to the many large-flowered varieties, by reason of their simplicity. He exhibited six or seven plants in tubs with crowns of 4 to 5 feet in diameter, with about 200 to 250 flowers each in bloom, grown as they would almost naturally grow, that is, without too much disbudding, and in the following old and newer favourite varieties, viz., *Source d'Or*, *La Triomphante*, *Admiral Sir T. Symonds*, *Wm. Seward*, *Gloire du Rocher*, and *Miss Gladys Routh*. Staged about 1 to 1½ foot from the floor, with an elegant



FIG. 127.—CATTLEYA EMPRESS FREDERICK VAR. LEONATA: HORT. VEITCH.
(Lip purplish-crimson, with orange veins. See p. 428.)

scape, or should be confined to hollows and ravines where their boundaries are obscured, or coincide with the margins of these natural depressions more or less closely. In any case, the margins of a hillside plantation should always be broken up as much as possible by throwing forward groups and single trees in advance of the main bulk of woodland. The boundaries of natural forest land illustrate what is referred to here better than anything, more especially where some indigenous species is spreading itself over a piece of waste land. In such a case, the outside trees are always smaller and more scattered than those towards the interior, and that clearly defined boundary line which so often marks an artificial plantation is always absent. A desire to make the most of the

there standing thick enough to form a striking contrast to the intervening openings and inlets. Such treatment is far more effectual than giving the boundary-line a circuitous or serpentine direction, which, of course, has no effect upon the light and shade alternations which are the chief beauties of a woodland margin.

If the above points were carefully attended to when planting and thinning British woodlands, the latter would prove to be quite as attractive a feature of landed estates as those parks and pleasure-grounds upon which so much attention is bestowed. When the unsatisfactory sylvicultural methods of British forestry are condemned, its advocates at once hasten to explain that ornament and not profit is the guiding

ground of *Dracœna*, *Kentias*, &c., their quiet, unassuming beauty struck every lover of flowers; it was a sight not to be forgotten, and found quite as much appreciation as any of the large-flowered—I had almost said, monstrosities!

Mr. Calvat, of Grenoble, also exhibited a collection of blooms of his this year's novelties, such as he intends to introduce next year. Of the former, Directeur Liebert, N. C. S. Jubilee, Baronne A. de Rothschild, and M. Hoste were very fine; whilst of the latter, the following seemed very promising, although all the blooms had suffered a little in transit:—*Madame Fossier*, very large, with broad white petals; *François Coppés*, amber-yellow, somewhat after the style of *Source d'Or*, with narrow, hanging florets; *Marie Calvat*, exceptionally large flower, of a delicate fleshy tint, very full, and with broad petals; *Madame Léonie Service*, white; and *Celeste Falconnier*, rose, were also good.

The varieties which have found the most distribution here, and which were staged in very fine specimens, are such all-round good sorts as *La Triomphante*, *Source d'Or*, *Avalanche*, *Admiral Sir T. Symonds*, *Nineveh*, *Wm. Tricker*, *niveum*, *Vivian Morel*, *Florence Davis*, *Wm. Seward*, *Chas. Davis*, &c., as well as a good many older ones, which are retained on account of their healthy and robust habits. With regard to the clean and healthy foliage of his plants, Mr. Ernst, who also staged a very good collection of the best of the older and newer varieties, obtained special commendation.

To summarise the best of the novelties staged by the various exhibitors, especially by Mr. Wm. Pfitzer, the following were universally admired:—*Madame Ferlat*, a beautiful incurved variety of a creamy-white colour, with very regular and close lying petals. *Secrétaire Fierens*, very fine Japanese, orange-yellow, with darker tips, and loose elegant florets—very large. *Mdlle. Lucie Faure*, extra, very large flower, pure white, similar in form to *Florence Davis*. *Beauté Grenobloise*, a very fine large incurved variety, creamy-white, slightly tinted in middle. *Madame Calvat* and *Madame Carnot*, both fine white large-flowering varieties, were also much admired. *Souvenir d'une Petite Amie*, a dwarf-growing variety, seems particularly suited for pot culture, ivory-white, and very free-blooming. *Madame Edmond Roger* seems to require a little more care in cultivation; it is of a peculiarly beautiful lemon-yellow colour, towards the centre green, and very free flowering—the flowers shown here were, however, rather too green. *Soleil d'Octobre* is a fine yellow, similar to *Miss Watson* in colour, with large full flowers and loose florets; an early sort. *Madame A. Brun*, very large, yellow-white, delicately striped with lilac, and very robust in growth. *Madame Bergier*, full large flower, with broad, loose petals; white, slightly tinted with lilac. *Surpasse Amiral*, golden yellow, at times lighter; large flat flower, striped red and brown. *Lago Maggiore*, very large and full, slightly twisted petals; a most beautiful yellow. N. C. S. Jubilee also obtained its full share of praise; whilst of other good varieties the following may also be noted, and should find a place in every collection:—*M. Ch. Molin*, amber-yellow; *Le Moucherotte*, bronze-yellow, gracefully incurved; *Isérette*, Inter-ocean, pearl-white, very fine; *Le Colosse Grenoblois*, enormous flower, fimbriated, somewhat similar in colour to the old superbe flore; *M. G. Chabanne*, canary-yellow; *W. H. Lincoln*, very fine yellow; *Rose Wynne*, delicate rose, extra; *Frau Commerzienrat Gruson*, orange-yellow; *Wanamacker*, the well-known American favourite, and *Calvat's Australian Gold*, which did not, however, show to much advantage.

Singles were very scarce, Ewan Cameron attracting the most attention, in beautiful compact plants, covered with flowers; the only others of this class of any merit, were *Purity*, *Silken Beauty*, *Mary Anderson*, and *Rafaelina Glüncke*, with large flowers, very loose pinky florets, and large yellow centre, of a very tall growth.

The above by no means exhausts the list of novelties and fine old sorts, for taste admittedly differ, but I think enough has been said to show that the exhibition was in every way well represented. *H. R. W.*

THE WEEK'S WORK.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

The Repairing of Fruit-walls.—The present mild weather offers a specially favourable opportunity to do any needful pointing and repairing of the fruit-walls. To neglect this kind of work when the state of the walls is getting worse yearly is to afford hiding places for a variety of insects which prey upon the fruit, young shoots, and the foliage. These evils are more especially noticeable on Apricot, Peach, and Nectarine trees. This is the only season when the trees can be unfastened, but there is the likelihood of the pointing being cracked and displaced by frost before the mortar has had time to harden thoroughly. This risk, however, may be lessened, if not altogether got over, by facing the new joints with Portland cement and gritty sand, in the proportion of two of the latter to one of the former, doing this part of the work in the forenoon, so that the cement may become hard, impervious to frost, before night sets in. In preparing for this job, first draw all the nails, if it is with these that the trees are secured to the walls, and lay the branches of each tree together in small bundles, fastening these to stakes driven into the border. Then, with a stiffish brush dab hot limewash into every hole and crevice, then make the joints good in the manner indicated. This kind of work is more conveniently done when it is spread over a series of years, the complete unfastening of the trees being an operation that takes much time, and the refastening still more time.

Wiring Walls.—The remarks made in the preceding paragraph may serve to remind—and probably convince—thoughtful readers of the *Gardeners' Chronicle* of the undesirability of securing trees to garden-walls by means of nails and shreds. Experience of both nailing and tying fruit-trees to walls, has taught me that tying is in every respect the better method. The initial cost of wiring walls, especially those used for Peaches, Nectarines, Figs, and Morello Cherries, is not heavy. Galvanised wire, No. 14 gauge, will answer admirably. The wires should be fixed horizontally at from 6 to 9 inches apart, running them through a series of eyes about 3 inches long driven into the joints nearly 2 inches, so that a space of about 1 inch intervenes between the wall and the wires so as to allow Peaches and similar fruits ample space to increase in size without coming in contact with the wall. The eyes or holdfasts (which may be purchased by the gross galvanised) may be driven into the wall at about 3 feet apart. If widths of 3 or 4-inch meshed, galvanised wire-netting—such as is used in poultry-yards—be tied over the horizontal wires used for Peaches and Morello Cherries, it will be found very convenient and suitable for training the numerous small shoots and branches to. I have always painted galvanised-wire two or three times before bringing tree or plant growth in immediate contact with it, with most satisfactory results. And this I strongly recommend readers to do who may contemplate wiring their fruit-walls.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

General Remarks.—For the next few months much vigilance will be required in maintaining the proper temperatures in the various houses; and as sudden changes in the weather are frequent, means should be taken to prevent any sudden changes occurring in the houses, or any disturbances of the proper degree of warmth and of aërial humidity; and undoubtedly the health of the plants depends, to a great extent, upon a carefully-managed night temperature. As artificially-heated air is injurious to the plants, fresh air should be admitted by opening the lower ventilators in the walls, and by damping the paths, &c. If the East-Indian-house is a dry one, a few evaporating troughs may be placed upon the hot-water pipes, and kept filled with water. One may, however, have too many of these troughs, in which case they become a serious evil; and if, on going into the house early in the morning, the foliage of any of the plants is seen to be covered with dew, it is a sign of excess of moisture in the air, which will, if persevered in, result in immature growth, "spot," and other evils. The hygrometer should always be in use in the winter to detect errors in regard to humidity in the houses. The East-Indian-house needs the larger amount of fire-heat to keep its temperature at the right point, and it should be well damped-down between the hours of 2 and 3 P.M., always saturating the ground

beneath the hot-water pipes at that time. Previous to damping-down, the warmth should be brought up to 65°; and at dusk, when the outside temperature generally falls a few degrees, the lower part of the roof should be covered with mats or some other thick material, fastened in some manner so as to prevent shifting during the night. A covering of this sort maintains the heat. The temperature of the house should be about 63° in the evening, and if the air has become dry, and it is thought that much fire-heat will have to be used during the night, the floors may be wetted again. The temperature at 6 A.M., if the weather be frosty, is better at 57° or 58° than at 65°. When at the lower figures indicated, more heat may then be admitted, and more moisture afforded. When the thermometer has risen to 63°, any plants in need of water may receive attention, and then, if the floors are washed or sprinkled, there will be sufficient moisture in the air to suffice till the afternoon. In the Cattleya-house, where the majority of the plants are resting, less atmospheric moisture is necessary, and a temperature of 55° or a little less is needed at night in cold weather. In mild weather a moderate damping of the floors twice or thrice a week will suffice, and in houses that are naturally damp, very little damping-down will be required. At the present time the Cattleya-house at Burford Lodge is kept at 60° by night, falling to 57° or 58° by the morning; the Mexican-house has an average temperature of 55°, and the air is kept rather dry. In the intermediate division, where there are grown *Epidendrum*, *Sobralia*, *Vandas* of the tricolor and suavis section, *Cologyne*, *Cymbidium*, *Miltonia*, *Platyclinus*, *Arpophyllum*, *Maxillaria*, the cooler-growing *Cypripedium*, as *C. insignis*, *C. Leeatum*, *C. Spicerianum*, *C. villosum*, *C. Boxalli*, *C. Shuhimi*, *C. Fairiesanum*, *C. Charlesworthi*, *C. venustum*, *C. vexillarium*, *C. Domini*, &c., the temperature is a degree or two below that of the Cattleya-house, and the atmosphere, in consequence of the plants requiring more water at the root than those, is moister. Where these plants cannot be accommodated to a house by themselves, they should be placed together at one end of the Cattleya-house.

PLANTS UNDER GLASS.

By G. H. MARCOCK, Gardener, Luton Hoo Park, Luton.

Gardenias.—In order to keep these plants in health, a constant war must be waged with mealy-bug and brown scale. If they are potted plants, let them be syringed or dipped at intervals of a fortnight in soap-suds at 95° of warmth, into three gallons of which a wineglassful of petroleum is poured. Plants that have heads of large size, and cannot for that reason be immersed in a tub holding but a few gallons of soap-suds, should be held on the edge by one workman, whilst another plies the syringe, observing not to let the stuff soak into the soil. Scale can be killed by immersing the heads in water heated to 140°, and held in it for a few minutes. It will not harm the plants, only it must be kept at that degree of heat by adding more hot water from time to time. This is good for all kinds of scale, and costs nothing.

Gloxinias.—If flower be required in the month of February, choose some of the tubers that have been the longest at rest; clear off the leaves, if any, take away the crust of soil for half-an-inch deep, replacing it with new loam, peat, leaf-mould and silver-sand; afford a slight watering, and set them near the light in the stove, Pine-pit, or forcing-house; syringe the soil and pots twice a day till the leaves start to grow, when no more water must be applied in that manner, but afford it to the soil only, and with a spouted can, in very moderate quantity at the first, till on turning out a few of the pots it is seen that root-growth has become active, and a greater quantity is needed at a time. In full leaf manure-water may be given to such unpotted tubers once a week with advantage.

Chrysanthemums.—The propagation of these plants may soon commence, the cuttings being selected from the best of the shoots springing from the roots, and those that have been the least crowded together. Place them in sandy loam and leaf soil in thumb-pots, and let the pots be plunged in fine coal-ashes or coco-fibre in hand-lights or bell-glasses inside of a low-roofed greenhouse. If much moisture condenses on the glasses wipe it off with a dry cloth in the early morning, and see that the soil in the pots does not become dry, airing the cuttings occasionally for half an hour.

Ferns.—A little more care should now be exercised in affording these plants water, which in mixed houses is not an easy matter, but much may be done to lighten the labour by arranging the various species

together in groups, as far as may be expedient. Most species of Ferns will bear a slight reduction of temperature up to the end of the month of February, and resting more or less is necessary to ensure a good growth by-and-by. Deciduous Ferns should be allowed to get dry if the pots are resting on a cool moist base, which is a rule applicable to *Davallias*, *Nephrolepis Bausei*, *Leucostegias*, *Lastreas*, *Osmundas*, and the pretty *Onoclea sensibilis*. More names might be given, but these will serve as a guide to the cultivator. *Gleichenias* may be kept on the dry side. A temperature of 40° at night will safely carry resting Ferns of the coolhouses through the winter. Tree Ferns should be afforded a resting period, the wetting of the stems being discontinued, but the temperature for these plants should not fall below 50° at night. *Adiantum cuneatum* will bear a similar degree of warmth, only sufficient water being given as will keep the old fronds from shrivelling. *Pteris tremula*, *serrulata*, and *cristata*, will bear a temperature of 45° when kept drier at the roots, and plants which are treated in this manner will start away strongly in the spring.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Dropmore, Maidenhead.

Fuchsias.—The cuttings that were inserted in September being rooted, may be potted singly in small and large 60's, if it is the intention to use them in bedding-out, and to keep them growing in an intermediate or stove temperature. Let them stand on a shelf near the glass.

Bulbs, &c.—Those bulbs which were planted in the months of October and November are pushing up leaves, and in some instances these are an inch above-ground. Daffodils and Jonquils being the most forward; and with a view to affording them protection in severe weather, place a mulch 2 inches thick of Cocoa-nut fibre refuse, spent Mushroom-bed manure, or half-rotten leaf-soil over the beds or round the clumps. It is seldom that the gardener can plant Roses and trees and shrubs at this part of the winter; and if these operations need completion, let them be pushed forward whilst open weather lasts. The Roses should be afforded a mulch of half-rotten manure when planted.

Cutting Evergreen Trees and Shrubs.—Some work of this kind may be done during the continuance of the mild weather. Laurel hedges and banks of Laurel may be cut back to the required height, not hacking the foliage, but sawing out the larger branches where requiring removal, and cutting back the smaller ones with a pruning knife or *secateur*. Hollies may be similarly treated, also *Cupressus Lawsoniana* and others forming hedges or screens that require some cutting into shape. At this season the trimmings of such shrubs are frequently in request for church and house decoration, and the cutting may be made to serve a two-fold purpose. As far as Hollies and berried shrubs generally are concerned, there is a decided scarcity of berries in this district, and very little berried Holly will be procurable for Christmas decorations this year.

Planting Lily Bulbs.—Lilies should be got into the ground without loss of time; and as the bulbs are now arriving from abroad, orders should be given for them, the first customers getting the pick of the same. The soil for Lilies should be moderately light, and well drained; or a special compost of turfy loam, leaf-mould, and sand should be prepared to plant them in. Put the bulbs 4 inches to 6 inches deep, according to size, placing five or six bulbs in a clump, and bed each firmly on its base, and make the soil firm about and above it. The Tiger Lily is very effective, and the bulbs cost but little; the same remark applies to *L. testaceum*, *L. longiflorum*, *L. dahuricum*, *L. croceum*, *L. candidum*, &c.

General Remarks.—The bedding *Pelargoniums* should be watered very sparingly for some time to come, more especially in rainy or foggy weather, and the cooler the house or pit be kept the less the quantity of water required. An ordinary greenhouse temperature, or a minimum of about 45°, with air afforded every day when the weather is favourable, will carry the bedding *Pelargoniums* safely through the winter months. Damp is the worst foe to them, but its evil effects may be minimized by warming the hot-water pipes or flues occasionally, if their aid be not required to keep out frost. *Coleus* and *Iresines* require a temperature higher than that of the cold greenhouse in winter, a minimum of 55° being afforded. If the plants are growing much, the tops should be nipped out; and if stock be required, these tops may be inserted in small pots filled with sandy soil, standing the cutting-pots in a forcing-house.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, late of Eastnor Castle, Leicestershire.

Cucumber-house.—The bearing-plants will require continuous attention if the supply of Cucumbers is to be equal to a constant demand for them; and in order not to use the energies of the plants in building up deformed specimens, look over them twice a week, removing all such whilst still very young, spent foliage being also removed at such times. Let the temperature remain steady at 65° at night, rising 10° by day with fire-heat, and more than that if the sun shines, affording a damping-down twice or thrice a day, according as little or much fire-heat is employed. Avoid hard firing in cold weather; rather let the temperature drop 5° than encourage red-spider. The surface of the beds or mounds should be loosened, and light warm top-dressings afforded. The bottom-heat should be kept at about 80°, and when the soil is in need of water, afford sufficient to moisten it throughout. If a dung-bed frame is available, some Cucumber seeds may be sown; the plants are sure to come in usefully to fill up gaps in the houses or plant a new one.

Tomatoes.—Let the shoots be tied thinly over the trellis, and thus expose the fruits to the sun, and afford a temperature at night of 60°, with a rather dry atmosphere, otherwise disease may show itself. If the quantity of fruit is a good one, some liquid-manure should be applied; but do not afford moisture at the root before it is really necessary. Fruit should not be kept on the plants after it is perfectly coloured. Let the plants for spring-planting stand where they will grow sturdily, that is, close to the glass in a warm house, not crowding them together, and affording air in moderation to them whenever it is safe to do so. Should there be no such young plants, a few cuttings may now be made and inserted in pots of sandy-soil, and plunged into a brisk bottom-heat. These will fruit earlier than seedlings, and it is the proper course to take when seed of any special variety is scarce. Seeds may now be sown and soil warmed in readiness for pricking off the seedlings. Let everything be brought inside of the Tomato-house, pricking off the seedlings there, so as to avoid checking growth by chilling the plants ever so little.

Strawberries.—The earliest of the forced plants will now have fruits formed, and will stand in need of manurial aids, which should be afforded in light doses. Keep a night warmth of 60°, and drive the plants moderately by day, say with sunshine at 70° to 75°, affording a small quantity of air whenever it is prudent to do so, even at night, in lessened amount in mild weather. Place more plants in the starting-pit, shifting a batch thence to the forcing-house; and pay particular attention to the plants in the early stage, giving a bottom-heat of 75° to force up the bloom, and not much (if any) water before that has shown itself, or leaf-growth only or blindness may occur. If a hot-bed of leaves is the vehicle of warmth, the moisture thrown off by fermentation will prevent the soil in the pots getting quickly dry. Never quite close the lights, even at night, so that vapour can escape. The plants may be plunged at not further from the glass than 1½ foot.

THE APIARY.

By EXPERT.

Feeding Back Extracted Honey.—Question: I have read somewhere that if I were to run an apiary for extracting honey during the harvest of white honey, and feed the same back to the bees to put into sections, said extracted honey would sell in the section form at a price that would give me a big profit. Is this a fact? If so, how and when should extracted honey be fed back in order to procure comb-honey?

Answer: The feeding of extracted honey in order that comb-honey may be obtained, is something that has been tried by very many of our best apiarists, and still remains an unsolved problem with some of those who have tried it. Some have reported success, and others a failure, but if I am correct, those who consider the thing a failure far outnumber those who consider it a success. From my experience in the matter, I should say if anyone must feed extracted honey to his bees, in order that comb-honey may be produced, it should be fed in the spring, in order to hasten brood-rearing, thus securing multitudes of bees in time for the honey harvest; then, by putting on the sections at the right time, a large crop of comb-honey may be secured, if the flowers do not fail to bloom, or to yield honey. My experience has also led me to think that it is better to secure the honey in the sections in

the first place, rather than have it stored in combs, and then thrown out with the extractor, that we and the bees may go through much labour and stickiness in order to secure the same thing which we might have secured without all this trouble. The practice of feeding back is on the principle of producing two crops to get one, and no one would argue that such a course would pay in the long run. Even under the most favourable circumstances, to finish nearly completed combs of honey, I cannot make it pay if I count my time as anything. At the close of certain seasons when I would have a large number of unfinished sections, many of which were so nearly completed that a few ounces of honey would apparently finish them, it seemed that it may pay to feed a little extracted honey to finish the same; but after a careful trial of the matter, covering a period of ten or more years, I finally gave it up as a bad job, and have not fed back a pound of honey during the past six years. If anyone should wish to satisfy himself that feeding-back will not pay, he can get the best results by feeding the extracted honey right at the close of the early white-honey harvest, so that the bees are kept active. It is thought best by some bee-keepers to take away all combs except those which have brood in them, when preparing the colony for feeding back; but if all combs are filled with sealed honey, except that which the brood occupies, there is no advantage in taking away the combs that I can see. The extracted honey should be thinned to a consistency of syrup by adding the necessary amount of warm water, thinning only the amount needed for one feeding at a time, for if the thinned honey is allowed to stand long in warm weather, it is quite liable to turn sour and be spoiled. From "Gleanings."

THE KITCHEN GARDEN.

By W. H. POPE, Gardener, Highclere Castle, Newbury.

The Root-store.—In bad weather, when the gardeners cannot be employed out-of-doors, the opportunity is afforded of making an examination of the roots stored in cellars and other places, removing those that have begun to decay, removing the growths from Potatoes, and generally sorting everything over. There are certain roots which, if not allowed to make a little growth, will rapidly decay, viz., *Salsify*, *Scorzoneria*, *Beetroots*, *Turnips*, *Kohlrabi*, *Paraleys*, and *Celeriac*. Such roots should not be thrown higgledy-piggledy in a heap, but be arranged in sloping banks of damp soil or sand, with the butt-ends protruding; and if a little light can be afforded, so much the better. They would grow if they were not bedded in sand, &c., but the result would be deterioration.

Onions.—The bulbs in the loft, or hanging in sheds, should also be examined, and any that are decayed or making leaf-growth removed. Onions are keeping uncommonly sound this year. Specimen bulbs reserved for bearing seed may now be selected, and planted on a piece of rich, well-prepared ground, in a warm spot, setting them with the tops just showing at the surface. The bulbs should have a slight mulching of litter in case of hard frost setting in. If more than one variety is planted, let the varieties be as far removed from each other as possible.

Preparations for Forcing.—The time is approaching when the forcing of Carrots, Potatoes, Radishes, &c., must be undertaken, and due provision should forthwith be made by collecting materials for forming the beds. These may consist of tree-leaves and stable-dung, or a mixture of the two. In any case, the materials must be fermented, to get rid of the rankness that is inseparable from quite fresh materials, especially stable-dung. If leaves and dung are used, it should be in the proportion of one of the latter to three of the former. Straw cow-manure will answer in the place of horse-dung, and all should be well mixed together, and thrown into a heap to ferment, turning it once or twice before making up the beds. Hot-bed-making has, however, been described here so often, that it is hardly necessary to say more than that the beds should be firmly and compactly built, be about 3 feet thick at the back, and sloping slightly towards the front, and allowed to settle somewhat before putting in the soil. An important point is a suitable soil, and means should be taken to get a sufficient quantity stored in readiness where it can be protected from the weather. Potting-shed refuse, which is available in most gardens, answers well for the surface, whilst a light rich garden soil will do for the staple, adding a third of leaf-soil, and a good sprinkling of wood-ashes, the whole being thrown together in a heap, and well mixed together a week or two before it is made use of. If shed-room cannot be spared for this, it should be well covered up with boards, &c., to throw off w

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, and as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, DEC. 25—Christmas Day.

SALES.

MONDAY, DEC. 30 { Border Plants, Bulbs, and Roots at Mr. Stevens' Rooms.

TUESDAY, DEC. 21 { Special Sale of Orchids in Flower and Bud, at Protheroe & Morris' Rooms.

WEDNESDAY, DEC. 22 { Lilies, Tuberoses, Azaleas, and other Plants from Belgium, Roses, Begonias, &c., at Protheroe & Morris' Rooms.
Rose and Fruit Trees at Mr. Stevens' Rooms.

THURSDAY, DEC. 2 { Border Plants, Palms, Shrubs, Bulbs, &c., at Mr. Stevens' Rooms.
Border Plants, Bulbs, &c., at Mr. Stevens' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—39°.

ACTUAL TEMPERATURES:—

LONDON.—December 15 (6 P.M.): Max., 53°; Min., 45°.

PROVINCES.—December 9 (6 P.M.): Max., 53°, Scilly; Min., 40°, Bournemouth.

Weather stormy, mild; light frosts.

Chrysanthemum Sports. THE mystery attaching to sports is as great as ever, and as interesting to cultivators as any physiological subject. For all that, Chrysanthemum-growers were conspicuous by their absence at the meeting of the Royal Horticultural Society on Tuesday last, or, if present, they remained silent. Nevertheless, several of them had previously furnished particulars, of which the lecturer, the Rev. GEORGE HENSLOW, contrived to make good use. Mr. HENSLOW had received about 100 sports of one kind or another, from which he was enabled to frame the following percentages. The number is, of course, too small to place implicit reliance upon; but, no doubt, now that the matter is started, additional evidence will be forthcoming:—13 per cent. showed a change from a light to a deeper yellow; 9 per cent. sported from red to a deeper red; 13 per cent. from red to bronze; 10 per cent. from red to white.

More interesting than the mere percentages obtained, at least, until the experiment has been made with greater exhaustiveness, is the information that in no case has Mr. HENSLOW found a yellow-flowered variety to sport to red. As a probable explanation of this, it was mentioned that the colouring matter in yellow blooms is granular, while in all the rest the pigment is liquid. Neither has a true yellow changed to white, so far as the enquiry has gone; but once has changed to white, in the case of the *W. Tricker*.

green-flowered sports (virescence) are to be met with in the light of a reversion to the condition, other examples of which are given by the green Rose, the green Dahlia, &c. In the case of the green *Ixias*, however, Prof. HENSLOW has ascertained that the green colour

is not due to chlorophyll, but to a modification of purple.

Some varieties are much more unstable than others; thus among incurveds, Queen of England, Empress of India, &c., have given quite a number of sports. Some of the Japanese varieties, too, have "sported" before the seedlings themselves have been long in cultivation. Vivian Morel, for instance, has already given Chas. Davis, Ethel Amsden, and Lady Hanham, at least, and the variety itself is tolerably new. Much of what Prof. HENSLOW said regarding the greater tendency of certain varieties to sport, may be explained by ascertaining the length of time they have been in cultivation. Thus, Queen of England and Empress of India have naturally produced a considerable number of variations, whilst many sorts are discarded before their capacity for change has had time to fully develop itself. This circumstance, and others of a similar character, prevent, at present, any conclusions from being absolute. Many sports are not preserved because they are of no commercial value, but if these were all registered, they would doubtless effect a modification of the analysis.

Another and most extraordinary phenomenon is the simultaneous appearance of the same sport in widely-separated localities; thus, the same sport occurs at the same time in this country, in Belgium, France, or Germany. The only possible explanation is, that the cuttings were all derived originally from the same stock; but this explanation will, we fear, not cover all the cases.

In the case of species and varieties, which have been cultivated from time immemorial, like Chrysanthemums, Roses, and Carnations, crossing, designed or accidental, must be of common occurrence, so that each plant is, as it were, a compound of many elements derived from other varieties. If, we suppose that for some reason which we cannot explain, these mixed components become separate or "dissociated," we may fairly infer that sporting in those plants is the result of the dissociation, but this dissociation, though as we believe, a feasible explanation in the case of Chrysanthemums, does not hold good in other cases, and so we are left—guessing.

The accumulation and organisation of evidence such as Mr. HENSLOW has got together will doubtless do much to clear up much that is mysterious.

One point we should like to emphasise is this, that so far as we know, sporting in the sense of bud-variation does not occur in annual plants. The approximately complete absence of resting buds in these plants will not account for the absence of sporting branches or leaves (we are not speaking now of the flowers). A visit to a trial-field of China Asters and Sweet Peas will suffice to bear out our assertion. Moreover, we have at various times been favoured with the opinion of Messrs. CANNELL, Messrs. DOBBIE & Co., and ECKFORD, who in response to our enquiries, have assured us that in the plants named they have not encountered a bud-sport apart from seedling-sports. The absence of sports in such plants is probably due to the fact that their life-history is too brief for the purpose.

In any case, this is one of those instances in which the growers, having the plants constantly under observation, can furnish most valuable facts for the physiologist to digest, and which facts must, in the end, prove of practical value by the introduction of a degree of certainty where now haphazard conjecture reigns almost supreme.

Principles of Plant Culture.

THE professor of horticulture in the University of Wisconsin has prepared for the use, in the first instance, of his own pupils, and subsequently of others, a little volume, which appears to us well suited for the purpose for which it was intended. The earlier chapters are devoted to "the round of plant-life," beginning with the process of germination, and ending with the gathering of the seed. Speaking of the formation of flower-buds, the author says:—"Plants form flower-buds only when they contain reserve food. Rapidly growing plants rarely form many flower-buds, because the food is used up in growth as fast as formed. Checking such rapid growth by removing the growing points of the stem or root, or by withholding water, results in an accumulation of food, and is often followed by an abundant formation of flower-buds. Obstruction of the rootward current of assimilated food, as by ringing, causes an accumulation of food above the obstruction, and is often followed by the formation of flower-buds in that part. Again, "A water-supply insufficient for rapid growth may suffice for abundant assimilation; thus . . . florists often bring their plants into bloom at a desired time by withholding water. The flower-buds of most outdoor plants are formed during the drier part of summer, when a restricted water-supply prevents rapid growth, but when abundant sunlight and fully-expanded foliage, favour assimilation. We may infer, therefore, that treatment that favours the accumulation of reserve food promotes the formation of flower-buds—a proposition that is borne out by the experience of practical cultivators." The accumulation of reserve food is promoted by favouring assimilation—that is, by exposing the plants to the light, and air, and heat, by supplying sufficient root-food, and by ensuring a check to growth when desired, as by allowing the plants to become pot-bound, by withholding water, or pinching the tips of the more vigorous shoots.

The third chapter deals with plants as affected by unfavourable conditions, such as excess or defect of heat, water, light, or food, and with the means of preventing or minimising the evil results occasioned.

Another chapter is devoted to the methods of propagation, the methods being described and the conditions of success or failure pointed out.

A similar plan is followed in the case of transplanting and pruning. We can not say the author is more successful in his account of the rationale of root-pruning than are other people; the explanations usually given being contradictory. The last chapter is devoted to "Plant Breeding." In the appendix is given a syllabus of laboratory work so arranged that each pupil, so far as practicable, is required to perform for himself the experiments mentioned in the book, and to practise the various methods of digging, pruning, propagating, and the like. The book is a very useful one for the student, and we should be glad to see it introduced here. At present, it can be obtained from the author, but any foreign bookseller could procure it.

OUR ALMANAC.—According to previous practice, we shall issue a *Gardeners' Chronicle Almanac* with our first issue in the New Year. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for 1898.

* An elementary treatise designed as a text book for beginners in agriculture and horticulture, by E. S. Goddard (Wisconsin), published by the author.

THE ROYAL BOTANIC SOCIETY'S SCHOLARSHIPS.—We learn from *Nature* that the London Technical Education Board will proceed in July next to award three junior scholarships in practical gardening, which will be tenable at the new School of Practical Gardening which has recently been opened at the gardens of the Royal Botanic Society, Regent's Park. This school has been established with the view of providing a complete course of instruction for lads who desire to become gardeners. The scheme of work, which has been drawn up by the Royal Botanic Society, combines thorough practical in-

the Crystal Palace, and £162 at Norwich, fractions of a pound being omitted in each case. The report of the committee is given in another column.

SOUTH-WEST CHINA.—An extract from a letter of Dr. HENRY, published in a recent number of *Garden and Forest*, announces the discovery of a magnificent Paulownia with evergreen leaves, "which is the most gorgeous sight when in flower imaginable." *Lonicera Hildebrandiana*, discovered by General COLLETT in the Shan States, also occurs in China, and bears flowers of a deep yellow colour, and

C. Spicerianum, and the hybrids *Harrisianum* and *Wallacei*. Amateurs who possess but little "hot-house" accommodation for their plants, may obtain a hint from this.

RENFREWSHIRE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—The usual fortnightly meeting of this Society was held in Yields Hall, Paisley, on the 8th inst. Mr. ROBERT GALLACHER, Craigends, in the chair. There were two subjects for this evening, the first being a paper on "Draining, Road-making, and Levelling," by Mr. JAMES WALKER,



FIG. 123.—A BED OF *YUCCA FILAMENTOSA*, IN MESSRS. JACKMAN'S NURSERY, AT WOKING, SURREY.

(Flowers ivory-white, making the plant very effective when planted in masses. It is particularly suited for planting on rockwork and rugged ground.)

struction in all the operations of gardening, with theoretical instruction in botany, and the nature of soils and manures. The course is arranged so as to extend over three years.

MR. J. B. CARRUTHERS.—We learn from the *Journal of Botany* that this gentleman has just started for Ceylon, where he has been commissioned by the Planters' Association to undertake investigations into plant diseases.

NATIONAL ROSE SOCIETY.—A copy of the balance-sheet presented to the annual meeting on the 9th inst., showed a balance at the bankers' of £39 18s. 7d., after payment of all expenses. The prizes amounted to £89 at Portsmouth, £243 at

about 7 inches in length. *Leucosceptrum canum*, of Northern India, is a remarkable labiate, forming a tree some 20 feet in height, and in habit like a *Buddleia*.

CYPRIPEDIUMS IN COOL-HOUSES.—A capital illustration of the possibility of cultivating with success many of the *Cypripediums* in a comparatively cool temperature, was furnished by an exhibit of ten baskets full of plants from Messrs. GEO. PAUL & SONS, Cheshunt, at a meeting of the Royal Horticultural Society on Tuesday last. These plants had been grown in a Camellia-house, where the temperature falls to about 40°, occasionally below. They had short, thick, healthy-looking leaves, and were well flowered. There were five varieties of *C. insigne*, also

Hawkhead. Mr. WALKER is an acknowledged authority in the district on such matters, and fully upheld his reputation by the able manner in which he handled the subject. The second paper came from Mr. MCKINNON, Kilnside, on "How Plants obtain their Food," in which he explained his subject clearly, in a terse, concise, and able manner. Both papers were much appreciated, and several members took part in the discussion which followed.

EDINBURGH SEED TRADE.—The third annual dinner of the assistants was held on Thursday evening, 9th inst., in the West End Café. Mr. W. MACKINNON (Mr. J. DOWNIE's) presided over a large attendance, and the employers were strongly repre-

sented. A capital programme was submitted, several professional musicians contributing greatly to the success of the gathering.

POTATOS IN AMERICA.—From the most recent reports on the 1896 crop of so-called Irish Potatoes, we learn that the average yield per acre is 64'6 bushels, against 86'8 bushels in November of last year, 100'7 in the preceding year, and 76'9 bushels—the average for the last fifteen years.

MEXICAN PLANTS.—Dr. J. N. ROSE, of the United States National Museum, has lately returned to Washington from a five months' botanical expedition through Mexico, bringing with him a collection of more than 1500 species. Most of the collecting was done in the States of Durango, Zacatecas, and Jalisco, and in a region which, it is said, has never before been visited by a botanist. *Garden and Forest*.

UNSEASONABLE FLOWERING OF PLANTS.—A correspondent resident at Evesham, kindly sends us a list of plants in flower last month, supplied to him by A. H. MARTIN, Esq., M.D., also residing in that place. The entire list is too lengthy for our available space this week, but we may indicate just a few of the 136 species and varieties given, viz., *Petunia hybrida*, *Lilium auratum*, *Helichrysum*, Sweet Peas, *Begonia*, *Leptosiphon*, *Agapanthus umbellatus*, *Sedum spectabile*, *Salpiglossis*, *Ageratum*, *Glaadiolus*, *Zauschneria*, *Heliotropium*, Love-lies-Bleeding, *Pyrus japonica*, *Arbutus Unedo*, *Kerria japonica*, *Coronilla glauca*, *Hydrangea*, *Abutilon*, *Tigridia*, *Choisya ternata*, *Cosmea*, *Berberis Darwinii*, *Iris alata*, *Lobelia fulgens*, *Heuchera sanguinea*, St. John's Wort, a sufficiently comprehensive, if much abbreviated list of plants, many of which are usually cut off by October frost. From a Dover correspondent we have a further list of forty-eight names of plants in flower at Buckland, and in Connaught Park, Dover.

PRESENTATION TO MR. W. H. HAMMERTON.—Advantage was recently taken of the occurrence of the annual dinner of the "Folkestone Amalgamated Gardeners' and Chrysanthemum Society," to present the Acting-secretary, Mr. W. H. HAMMERTON, with a purse of money, and an address expressive of the appreciation of his work by the members. The presentation was made by the Mayor, and it was all the more pleasant to the recipient because so unexpected. Mainly through the exertions of Mr. HAMMERTON, a successful exhibition of Chrysanthemums has been established at Folkestone.

CULTIVATION OF MELOCACTUS HUMILIS.—In the number of *Nature* (November 25), in the report of a meeting of the Amsterdam Royal Academy of Sciences, Professor SURINGAR is mentioned as having "presented a fifth contribution to the knowledge of the *Melocacti*, as a sequel to previous papers." The author showed the skeleton and a photograph of a specimen of *Melocactus humilis* from Venezuela, described by himself in 1889, and seeds of which he sent at the time to the firm of DAMMANN & Co., near Naples. It seems that the culture of this plant, which does not succeed in hothouses in North and Middle Europe, might be tried with advantage in the sunny climate of the South Italian coast, exposed to sea-winds. Professor SURINGAR exhibited a live specimen, now seven years old, raised from the seed by the above firm, and which has already blossomed and borne fruit. With the exception of a slight difference in size and shape, the mother and the daughter plant are very similar. In the colony itself, too, the culture will be tried, that it may be possible to send culturable specimens over from there without detriment to the natural flora. The author exhibited photographs, and gave a description of five new genera, received from Curaçao. These specimens, which have developed plants in tolerably large numbers the latter, will be sent back to with those of some known genera, time and determined in Amsterdam, so that the seedlings will at their own names. In conclusion, the

author presented for inspection the first part of the *Iconography*, announced some time back, and published by the firm of E. J. BRILL, at Leyden, as the third volume of the *Musee Botanique*, and entitled *Illustrations de Melocactus*, with reproductions of photographs and coloured plates of the thorns, flowers, and fruits."

PRESENTATION.—On November 22, Mr. J. T. ECCLESTONE, F.R.H.S., who has been appointed Head Gardener to T. P. WOOD, Esq., Brambling House, Chesterfield, was the recipient of a handsome clock, presented to him by the gardeners under him on his leaving Canwell Gardens, the seat of A. B. FOSTER, Esq., where he has been Head Gardener and Forester for a period of eight years.

THE GERMINATION OF CONIFER SEEDS.—A great difference exists in the germination of conifer-seeds from different localities. The seeds of all the conifers hardy in the eastern States of America come up at the same time or nearly so. Norway Spruce, White Spruce, Scotch, Austrian, and Mountain Pines, the Colorado conifers, *Picea pungens* and *P. Engelmanni*, Douglas Spruce, *Abies concolor*, and other common conifers can all be uncovered at one time. But few seedlings come up ten days after the first ones appear, while conifer-seeds from a warmer climate are very irregular in germinating. I raised a large quantity in California in 1889 and 1890. The kinds already named were sown in beds adjacent to the more tender kinds. *Pinus Jeffreyi*, *P. ponderosa*, and *P. tuberculata* started from two to four weeks before the others came up. *Abies magnifica*, *A. grandis* and *A. amabilis* came very scatteringly; the first of these appeared in April and the last in September, and they required careful attention. The various *Cupressus* varied as much as the *Abies*. Douglas Spruce, *Abies concolor*, and *Pinus ponderosa*, from Colorado, came up much more regularly than the same species from seed collected in California, but the seedlings from California-seed made much larger plants at the end of two years. Most of the seed from the Orient acted as those of our native and European species do, being very regular in germinating. The exceptions are *Picea Morinda* and *P. Ajanensis*, but as I had very little seed of the latter, and that apparently two or more years old, I may be mistaken in this particular. The seeds of *Sciadopitys verticillata*, *Cedrus Deodara* and *C. Libani* are also irregular in time of germinating. *Cedrus atlantica* may also be added to the list, but it comes up more evenly than the seeds of other Cedars. The seeds of our native White Pine are the most uneven in germinating of those of the hardy conifers; but although they sometimes come up irregularly, this tree can hardly be classed with the species which are irregular in germinating. *Thuja gigantea* and *Libocedrus decurrens* are irregular. T. H. Douglas, in "*Garden and Forest*."

THE AMATEUR HORTICULTURIST.—We all know how difficult it is in practice to define an amateur; schedule-framers, judges, and journalists, all blunder in turn over him. If we turn to our brethren in Canada, we find the directors of the Toronto Horticultural Society deciding that an amateur horticulturist is "one who does not depend or has not depended in any way for his living on any occupation connected with horticulture." A literal interpretation of this definition, however, would lead the reader to infer that one need have no connection whatever with horticulture, and yet be considered an "amateur horticulturist." This appears to be something of a paradox. But the directors have also furnished an addendum clinching their definition; they add, "and any person residing with or on the premises of one who so depends or has depended for his living on any occupation connected with horticulture is debarred from exhibiting." This embargo may have a local significance; but to an outsider it appears uselessly severe, and we are no "forrader" over here.

THE ARTIFICIAL PRODUCTION OF VARIATED LEAVES.—At a recent meeting of the Horticultural Society of Berlin, Garden-Inspector LINDE-

MUTH of that city suggested that it might be possible to produce variegated varieties of every species, provided that there be a form with coloured leaves in some way related to it, but not necessarily of the same species. His theory is based on his experience that if a variegated variety of one species is grafted on a green form of another species, and vice versa, the green plants produce variegated shoots. By way of proof, he exhibited *Abutilon Thompsoni*, fol. var., grafted on *Malvastrum capense* with green leaves, which, below the graft, had produced shoots with striped leaves. Again, he showed *Kitaibelia* species with green leaves grafted on *Abutilon Thompsoni*, fol. var., and thereby having become variegated. A cutting taken from this new coloured variety, planted in the open ground, had grown vigorously, and remained variegated. *Althaea officinalis* grafted on *Abutilon Thompsoni*, fol. var., became variegated. *Petunia hybrida* grows readily and vigorously if it is grafted on *Nicotiana glauca*.

"FLORIST."—It is evident from the annexed extract from the monumental English dictionary, published by the Clarendon Press, that the compilers have not succeeded in recording all the shades of meaning attaching to this word.

"Florist" (flōr'ist). [*f. L. flōr-, flōs flower + -ist. Cf. Fr. fleuriste, It. fiorista.*] One who cultivates flowers: one skilled in knowledge of flowering plants; also, one who raises flowers for sale, or who deals in flowers.

1623 Sir H. Wotton in *Reliq. Wotton*, 407 It hath given me acquaintance with some excellent Florists (as they are stiled). 1678 VAUGHAN *Thalia Rediv.*, To his Books 47 Choice Flow'rs, all set and drest By old, sage florists. 1718 *Free-thinker* No. 11 ¶ 7 She will watch... as a Florist does a Bed of Flowers in the Spring. 1808 *Pike Sources Misiss.* III, 210 This father was a great naturalist or rather florist: he had large collections of flowers, plants, &c. 1871 *EARLE Philol. Eng. Tongue* § 251 They differ as the flowers of the florist differ from those of nature."

The special sense in which a man is a "florist" or occupies himself with "florists' flowers," is not brought out, and, indeed, it would be difficult to frame a satisfactory definition. LITTRÉ is no more complete in his French Dictionary, for he does not indicate the common use of the term among his countrymen to signify a herbarist, collector or field-naturalist. On the other hand, he tells us that the word *fleuriste* is applied to makers of artificial flowers, whom we should never call florists.

FINE ARTS EXHIBITION.—In connection with the summer exhibition of the Antwerp Royal Horticultural Society to be held in July, 1898, there will be a section for pictures of plants, flowers, and fruits in oils, water-colours, pastels, &c. Artists of any country will be admitted.

A VETERAN EXHIBITOR.—M. HENRI VANDERLINDEN has, since 1858, never failed to take part in the Antwerp Horticultural Society's annual exhibitions. Next year it is proposed to celebrate the fortieth anniversary of his career as an exhibitor. In 1857, M. VANDERLINDEN built his first greenhouse. It is remarkable also that he has had in his service but two gardeners, the former of whom is now dead.

SALE OF CYPRIPEDEUM BECKMANI.—*Cypripedium Beckmani*, which did not obtain a Certificate of Merit from the Royal Horticultural Society, being judged identical with *C. bellatulum*, was recently sold for 400 francs.

CARDIFF AND DISTRICT CHRYSANTHEMUM SOCIETY.—The annual dinner of this Society was held on the 8th inst., at the Marchioness of Bute Hotel, under the presidency of Mr. FRED. G. TREBESER, when about fifty members and friends attended. The usual toasts were proposed and duly honoured. The recent show was the best as yet held by the Society, and the results were likewise better than in previous years, and a small balance remains in hand. The date of the show next year will be as near as possible to that of this year.

SCILLY ISLANDS.—It is said that the flower crops on the Scilly Islands are not so forward as they were last year, which was a record one, and the general opinion among the farmers is that the early

blooms will not be so prolific as last season. Various reasons are given for this, one being that the bulbs are somewhat exhausted after the exceptionally heavy crops they produced last year. It is to be hoped that good prices will compensate for any deficiency in quantity. Much has been done recently by the Great Western and the North-Western Railways to develop this delicate industry. New markets in the North have been opened up by a quick and improved service of fast trains, particularly the new night express from Bristol by the

made:—Certificates of Merit to Comte Joseph de Hemptinne, for *Oncidium crispum*, and for *Cypripedium Leeatum giganteum*; to M. Van Wassenhove, for *Kentia Belmoreana*; M. A. Rigouts (*à l'unanimité*), for *Vriesia Makoyana* and (*par acclamation*), for *Stenorhynchus speciosus* var. *maculata*; also for *Nepenthes coccinea* and *N. atrosanguinea* (both *par acclamation*). To M. A. Rigouts again, for *Ataccia cristata*, and (*par acclamation*) to M. E. Bedinghaus, for *Phyllaea ericoides*. M. A. Rigouts was awarded a Botanical Certificate for *Coccolopsochelys repens*, and

tion, Calvat's Gold, President Nonin, M. Gustave Henri, M. H. de la Blanchetais, Charles Davis, N. C. S. Jubilee, Souvenir de ma Petite Sœur, Lord Brooke, Edwin Molyneux, Reine d'Angleterre, George W. Childs, Beauté Grenobloise, and Mrs. C. Harman Payne. The exhibits are to be so staged as to admit of their being carefully examined by the jury. The 1st prize will be a gold medal (150 francs) offered by Baron Ed. Osy de Zegwaart, Governor of the Province and President of the Society; the 2nd prize a gold medal (75 francs), the 3rd prize a medal (50 francs).



FIG. 129.—MARATTIA BURKEI: TREE FERN. (SEE P. 425.)

Severn-tunnel route, in direct connection with the up night mail from Penzance. Consignments leaving the islands in the forenoon are in the Liverpool and Manchester markets as early as six the next morning, at Edinburgh and Glasgow by midday, and at such a distant station as Aberdeen at six o'clock on the evening of the following day.

CHAMBRE SYNDICALE DES HORTICULTURE BELGE.—On the occasion of the meeting, on December 5, of the Chambre Syndicale des Horticulteurs Belges and of the Société Royale d'Agriculture et de Botanique, at Ghent, the following awards were

M. A. Toeffaert Honourable Mention for *Cypripedium* var. The jury expressed a wish to see, on some future meeting, *Cattleya striata*, exhibited by M. Van Wassenhove.

A BELGIAN CHRYSANTHEMUM COMPETITION.—The Antwerp Royal Horticultural and Agricultural Society propose to hold, next year, from November 12 to 14, a Chrysanthemum show, one section of which deserves special mention. For this are to be entered twenty specimen-plants of named varieties of Chrysanthemums, namely, Lincoln, Charles Shrimpton, M. A. Charmet, White Plume, Ma Perfection,

AMSTERDAM CHRYSANTHEMUM CLUB.—There is now a Chrysanthemum "Club" in Amsterdam which has lately published a catalogue prefaced by an article on the history and cultivation of this plant, by M. J. K. BUDDE, of the Utrecht Botanic Garden. It is he who introduced from Japan seeds of the Chrysanthemum indicum type—at least, so it is supposed. He sowed these, and a specimen grown by him from them was shown at the Amsterdam Exhibition. This enabled the actual forms to be contrasted with the primitive forms. M. DE LANGE, at Rotterdam, has held a very successful Chrysanthemum show. This afforded opportunities for testing the values of dif-

ferent manures; and Papillon, from M. A. CORDONIER, of Railleul, induced specimens with stronger stems, more vigorous and darker leaves, and finer flowers than were obtained by ordinary treatment.

PUBLICATIONS RECEIVED.—*Snap-Shots Christmas Number*. The same old pictorial Christmasy comicities, tales, and jokes, done up in an up-to-date style.—*Palmenzucht und Palmenpflege, &c.*, Von Dr. UDO DAMMER. We shall take an early opportunity of noting this book.

PLANT PORTRAITS.

DABCOXIA POLYFOIDA, Garden, October 30.
GARDENIA FORTUNEI, *Revue de l'Horticulture Belge*, November.
NEPENTHES JARDINII, sp. n. (Bailey), *Queensland Agricultural Journal*, September 1, 1897.
NEPENTHES ROWANAE (Bailey), *Queensland Agricultural Journal*, September 1, 1897.
POLYGONUM VIRGINIANUM, *Meehans' Monthly*, October.
RHODODENDRON KEWENSE X *BINDER*, *Garden*, October 9.

HOME CORRESPONDENCE.

THE LATE JAMES BATEMAN.—I may perhaps be permitted to add an interesting fact to the biographical sketch (*ante*, p. 400) of this distinguished and venerable horticulturist and orchidologist, who so recently passed away. When Sir William Hooker became editor of the *Botanical Magazine* in 1827, he instituted the practice of dedicating the yearly volumes to eminent botanists, horticulturists, and collectors. The first was dedicated to Robert Barclay, a patron of horticulture, who had a fine garden at Bury Hill, Dorking. Ten years later, in 1837, we find the same compliment was paid to the late James Bateman, in the following terms:—"To James Bateman, Esq., of Knyppesley Hall, Cheshire, author of the magnificent *Orchidacea of Mexico and Guatemala*, a work of which it is hard to say whether the beauty of the subjects represented, the execution of the figures, or the taste and judgment displayed in the typographical department, is most to be admired—the present volume is dedicated, with sentiments of high regard and esteem by his obedient friend and servant, W. J. Hooker." Sixty years is a long time to look back, especially in gardening, and more particularly in the history of the introduction and cultivation of Orchids. The first epiphytal Orchid figured in the *Botanical Magazine*, pl. 152 (1791), was *Epidendrum fragrans*, incorrectly named *E. coelestium*. This was regarded as a great curiosity, and its successful cultivation as a triumph of horticultural skill. A few years previously (1768), the great gardener of his day, Philip Miller, considered it futile to attempt to grow epiphytal Orchids. W. Bolting Hemsley.

THE ROYAL BOTANIC SOCIETY.—When issuing the schedule of prizes for 1897, the Royal Botanic Society of London inserted an additional regulation as follows:—"Successful competitors can obtain their prizes on the day of exhibition on application at the office after 5 P.M.—By order of the Council, J. Bryant Sowerby, Secretary." Can such a regulation be considered just when the successful exhibitors of 1896 have not yet received their prizes? Promises of "immediate attention" from the Society's office are renewed on application, but a request to be allowed to bring the matter before a meeting of the Council remains unanswered, although a stamped addressed envelope was enclosed for a reply. Also further attention called to the request. It seems scarcely possible such gentlemen as the members of the Council of the Royal Botanic Society of London could be aware of facts when they inserted the above unjust regulation, so far as previous exhibitors are concerned, at least, such is the opinion of *One of the Victims*.

BIG RED CABBAGES.—I have recently cut, in my master's garden, two heads of Cabbage, the joint weight of which was 5 stone 8 lb., the one being 42 lb., and the other 38 lb. *Sydney Harrison, gr., Hett Hills, Chester-le-Street.*

THE EVOLUTION OF THE BIG CHRYSANTHEMUM.—A comparison between the flowers of the wild type and the largest exhibition blooms produced by expert growers of Chrysanthemums, gives surprising results. Through the kindness of Mr. H. J. Jones and Mr.

Norman Davis, I secured large blooms of Madame Carnot (Japanese) and Mrs. R. C. Kingston (incurred); and, as representing the wild form, I took a flower of a small flowering seedling, which is the nearest approach we have at Kew to the dried specimens collected in China by Dr. Henry. I carefully weighed them and counted the florets in each, with the following results:—

	Type-like seedling.	Incurred (Mrs. R. C. Kingston).	Japanese (Mme. Carnot).
Weight of capitulum, including 6 inches of leafless stalk ...	½ oz.	8½ oz.	7½ oz.
Number of florets in capitulum ...	205	1053	1753
Length of longest florets ...	½ in.	3½ in.	7 in.
Width of florets ...	½ in.	½ in.	½ in.

In Madame Carnot the capitulum consisted of a large central receptacle, from which most of the florets sprang, but instead of its being naked when they were removed, it showed a broken, irregular mass of involucre bracts, which in the normal flowers are restricted to an outer whorl surrounding the plants. In addition to the florets which sprang from the receptacle, there were also numerous adventitious heads of florets developed in the axils of some of the bracts of the involucre proper. In other words, instead of a distinct plate-like receptacle, surrounded by a whorl of bracts, the involucre, and bearing all over its surface the florets, the whole capitulum was a confused mass of bracts and supplementary basal clusters of florets. From this it would appear that, by restricting the plant to one or two stems, and each stem to the production of only one head, the excess of organised food induces not only exceptional length and substance in the florets themselves, but also the formation of adventitious flower-heads, which go to increase the size of the whole. A great range of variety was revealed in the length of the tubes of the florets, and in the lobing or splitting of the flattened portion. Some of the florets were closed tubes for their whole length; others were closed nearly to the apex, whilst in other cases they varied. The lobes in some cases were almost horn-like. If this amount of variation occurred in other flowers than those of Compositeæ, we should be much surprised. These observations apply to only one bloom of a Chrysanthemum; how much more striking would be a comparison between all the many forms now in cultivation! One wonders how much further variation in the Chrysanthemum may be carried by breeders. W. W.

A HALL FOR HORTICULTURE.—All the controversy respecting the National Chrysanthemum Society and the Royal Aquarium tends to show what an ill-adapted and unpleasant place it is in which to hold horticultural exhibitions, and the disappointing amount of money the directors offer the Society compared with what is actually received at the turnstiles. This has been forcibly debated in the *Journal of Horticulture* recently, and such discussion is in my opinion most desirable, for the reason that there is at present no other suitable central place. It seems to me that the only remedy for future success is to set to and find a site, and erect a building, temporary or otherwise, so that the most ardent in horticulture may have full control according to our likes and means. The scheme for a horticultural hall, which I suggested several years ago, and similar to what is in existence in many cities in America and on the Continent, was most favourably received by the President, Council, and also the committee of the Royal Horticultural Society; thousands of pounds were promised, and this I sincerely hope still stands good. If I am not mistaken, one gentleman offered to give £5000 if a similar sum was subscribed by a certain time; but, unfortunately, just at that time financial matters in the world were unfavourable, and great depression in business existed, and it seems to me that the present time should prove to be a most opportune moment for the revival and carrying out of that or a similar scheme. If a powerful and influential committee was selected from the National Chrysanthemum Society, and if our highly esteemed president, Sir E. Saunders, could be induced to act as spokesman, offering our cordial support to the President and council of the Royal Horticultural Society, the whole matter could be discussed, and the feelings of kindred societies and the public generally be ascertained. The Rose, Carnation and Picotee, Auricle, Narcissus and Cacti Societies con-

tinue to hold their shows at the Drill Hall, and I feel sure the National Chrysanthemum Society would be received with open arms by the Royal Horticultural, and without that chartered body wishing in any way to exercise any control over its internal arrangements whatever. I am both willing and anxious to co-operate in assisting to bring something of the kind prominently before the public. Unity is strength, and it seems to me, if the united strength of all the kindred societies now existing in London could be secured, and if they would pay their proportion towards the interest on borrowed capital, if such a course was deemed necessary, there is no reason why we should not have a home of our own for ever, and not lodgings. I think we might reasonably count on something like the following income, each society, of course, taking its own gate-money:—

Royal Horticultural Society ...	£400 per annum.
National Chrysanthemum Society ...	200 "
National Rose Society ...	100 "
National Dahlia Society ...	100 "
Carnation and Picotee Society ...	50 "
Auricle Society ...	25 "
Cactus Society ...	10 "
Letting the Hall for horticultural business Committee meetings ...	100 "
Letting for other approved purposes ...	1000 "
	£1935

This at 4 per cent. gives a borrowing power of nearly £50,000. If the Council would favourably reconsider the suggestion, and all kindred societies would cordially support such or a similar scheme, it seems to me we can well picture Phoenix rising boldly out of its own ashes, and British horticulture going on in rapid harmonious strides. It certainly is an undisputed reproach that horticulturists do not possess in the City of London a building large enough to hold even an ordinary flower-show, and, in my opinion, it is now quite time we did. I ask one and all if the time has not arrived when this hall should be begun? H. Cunnell.

THE CHRYSANTHEMUM AND THE FUTURE TEMPLE OF FLOWERS.—It must be the hope of all horticulturists, considering the inadequate accommodation for floral displays in the metropolis, and among other things, just lately, for the Chrysanthemum in particular, that the realisation of a scheme for a common centre of the first order for horticultural exhibitions, should be achieved. It can indeed be only a matter of time when this idea, supported by the increasing number of Fellows of the Royal Horticultural Society, and the resources and initiative of this Society, will be put into practice in a satisfactory manner. I should also like to see, in reference to the Chrysanthemum, the tendency arrested towards ever larger and larger blooms, which are now approaching, if they do not already in some of the new varieties deserve, the term "monstrosity." The public taste for the encouragement of mere size, diverts beauty into a mischievous channel, and the craving for varieties of sensational size must soon pass the limits beyond which all claim to beauty is forfeited. It may only need a few years' further development for the result to be deplorable, and for a justly favourite flower to be rendered a thing of the past, as is already the case with many of the double-flowered tuberous Begonias. I only refer to this excessive size of blooms in order to propose that, instead of offering prizes to encourage their production, and the present fashion in showing cut flowers, a truer perception of perfection be supplied by some clever cultivator, as, for instance, by showing only plants in pots with, say, three blooms, or even more on each, at future exhibitions. The dwarf habit of some of the more modern varieties might be insisted on in regard to all future novelties, and these would lend themselves additional attractiveness to an exhibition. Certainly the exhibition of the blooms on the plants would require more space than the present method, which crowds the blooms far too closely. In this connection, the apparent abandonment of trained specimens of all types, either squat or pyramidal, with dozens of flowers on each, can hardly be defended. Were the necessity for exhibitions of increased space, and last—not least—light, thus to become a lever in the direction of the hall of the future, it might step into life, let us hope, with the new century now close at hand. Let us also hope that all the land suited to the purpose of a hall on the Thames Embankment is not yet bespoken. Although two attempts at combined action in the direction of the realisation of the scheme were made early in this and the previous year, the problem is still unsolved. Let us be a little

* Altou records both of these (*Hortus Kewensis*) as having been introduced in 1765.

superstitious, and predict the symbol "three" as of good omen. *H. H. R., Forest Hill.*

DIGGING THE ALLEYS RUNNING BETWEEN BEDS OF ASPARAGUS.—I am a grower of Asparagus in a small way only; still, I must take exception to your contributor on p. 399 of the *Gardeners' Chronicle*, who said "that the alleys may then be dug." The roots of Asparagus at Newbury must be very different to what they are here, for even when planted 3 feet apart the roots meet, and it is impossible to dig, and to attempt it with a spade would be, in my opinion, an act of Vandalism. He then writes as to raking off any rough portions that remain in March and April. Experience has taught me that Asparagus wants a covering of manure in summer far more than in winter; besides, the said heavy dressings must retard the growth in early spring, and most of us want it as early as possible. *J. K., Wimborne.*

ROSE CLOTH OF GOLD.—I was glad to see the note from "Wild Rose" concerning this beautiful variety. The error, whether of my pen or of the printer, which gave 15 inches as the diameter of the stem of a plant of Cloth of Gold was so evidently a misprint for circumference, that I did not trouble to correct it. Like "Wild Rose," I have seen this old favourite in grand form, and also scores of failures. There are no Roses that need more careful pruning than Cloth of Gold, Rêve d'Or, the Banksians, and other very vigorous growers. It is not so much on account of tenderness, as from the fact that all of our extra vigorous Roses flower upon the ripened wood of the previous season, and any of this which has passed through the winter is far too valuable to be cut away. Your correspondent instances a case where pruning was undoubtedly the fatal stroke to a grand old plant of Cloth of Gold. Upon a rectory in this neighbourhood is—or was, a few years back—a fine specimen; in the adjoining parish there still is a second plant growing in a very sheltered spot. This was the cellar of an old mansion, and is now turned into a Rose-garden. In the near distance the garden is completely surrounded by trees and specimen shrubs, several of which are among the finest in the country. With such shelter, plenty of light, and a good depth of loam, Cloth of Gold grows remarkably well; but, unfortunately, the gardener has only one system of pruning Roses, consequently the plant annually produces wood that I have many times envied him the possession of, but which is far too hardly pruned to bloom. The specimen I mentioned in your issue of November 20 as flowering well during the past season is upon the mill-house at Barcombe, Sussex. I never noticed the true Noisette form of Cloth of Gold so distinctly as in this instance, scarcely a flower being borne singly. Respecting the drooping habit of Maréchal Niel, I think this rather an advantage than not, as one can better see the beauties of its blossoms upon walls and the fronts of houses than if borne in the boldly-upright manner of Cloth of Gold when doing well. *A. P.*

CARNIVOROUS SLUGS.—The worm-eating slugs are very plentiful in a large walled-in garden near Bury St. Edmunds, and I have had many opportunities of seeing them at night. On warm, showery evenings, especially, they may be found crowding the gravel-walks, and the Box-edgings which border the latter; in fact, their habits as regards locomotion are much like those of other slugs. Some few years ago I brought away one evening from the garden in question—which, by the way, is remarkably free from worms—more than half a peck of the slugs, and turned them down in the kitchen-garden here; but I regret to say, that of these or their progeny I have scarcely seen any since; probably they may have wandered into the shrubberies and long grass and got lost, there being no walls round the garden into which I put them to keep them at home. *J. C. Tallack.*

MUSCAT OF ALEXANDRIA SPORTING.—It is to be hoped that the recently mentioned sport from this Vine, which has appeared at Chiswick, will prove more amenable to treatment than a similar one which I had here until within the past year or two. In 1888 I planted a house mostly with this variety, and cut the young Vines down to within 1 foot of the soil, after which they were taken up as single rods in the usual manner. In 1892 I allowed one of these Vines to carry two young rods, one on each side, and these sprang from a point 6 feet from the soil, close to the lowest training wire. One of the young rods developed into the normal type, precisely similar to the parent rod; the other was much coarser in growth, did not ripen its wood well, and

carried leaves exactly like those of Canon Hall Muscat. When this rod fruited, the Grapes, too, were precisely similar to Canon Hall, being very large, round in berry, and the bunches set very badly indeed. Now and then we got a fairly good bunch, but the results generally were so bad that after a few years' trial I cut out the rod. During its existence it was seen in fruit by many who were perfectly familiar with both Grapes, and all were agreed as to the complete resemblance to Canon Hall. I made no attempt to propagate from the rod, as the absolute impossibility of getting a good set throughout made it worthless, and since destroying it there has been no recurrence of the freak on any portion of the Vine. *J. C. Tallack, Livermere Park Gardens, Bury St. Edmunds.*

GRAPES AT THE ROYAL AQUARIUM.—Mr. C. Bayer of Forest Hill, whose able gardener, Mr. Taylor, exhibited such a very fine collection of Grapes at the Drill Hall on October 26, comprising thirty-four bunches in thirteen varieties—a considerable feat for the time of year, again showed his cultural capacity in Grape-production at the Royal Aquarium on the 7th inst., when he set up eighteen capital bunches in five varieties, an admirable mid-winter exhibit, all the bunches being excellent. There were six Muscat of Alexandria, the finest being model bunches, long, tapering, and berries good and richly-coloured; three Lady Downe's, very long, compact, handsome, and black; four Gros Colman, two of the bunches being twins, yet very fine in berry, and well finished; three Black Alicante, intensely coloured; and two Trebbiano, bunches of good useful size, and berries clean and very bright. Such a Grape exhibit merits high commendation. *A. D.*

PLANT NOTES.

BEGONIA FUCHSIODES.

THIS charming Begonia, introduced to this country more than fifty years ago, still remains one of the best of winter-flowering varieties. Its culture is simple, and habit of growth graceful and free. Cuttings of the plant struck in the spring, and grown on in garden-frames, make plants of a useful size by the autumn, when, if introduced to an intermediate-house, they soon open their flowers, and in the month of December are at their best, continuing in bloom more or less throughout the winter. The plant also flourishes when planted out in a warm conservatory, and for draping pillars it is one of the best flowering subjects for the winter. At the present time some plants, 8 to 10 feet high, growing in a border in a warm-house in Mr. Astor's garden at Cliveden, Maidenhead, are nicely in bloom, and their pendent crimson-scarlet flowers are making them exceedingly attractive plants. *C. H.*

BROWN ROT IN TURNIPS AND CABBAGES.

DURING the past three or four years this disease has proved very destructive in various parts of the United States, and has been investigated by Dr. Erwin F. Smith. The symptoms are very marked; in Turnips the leaves are green and healthy, but the roots remain dwarfed, and resemble small Carrots rather than globose, or flat-bottomed Turnips. Although appearing healthy on the outside, on being cut across, the flesh of the root is seen to be brown, and eventually becomes more or less hollow, and remains fairly dry to the last.

In Cabbages the woody portion of the stem is dark brown; yellowish patches, with black veins, are also present on the leaves. The tissues remain dry, and there is no offensive smell. The characteristics of the disease are therefore a browning of the vascular portions of the plant, accompanied by dwarfing; Turnips fail to develop a root, and Cabbages are prevented from forming a head. Microscopic examination showed the brown vessels of the plant to be crowded with a minute organism called *Pseudomonas carpepestis*, and inoculations with pure cultures of this organism have proved that it is the cause of the disease.

When once present, the disease often spreads

rapidly, and experiments have shown that the inoculation of healthy plants can be effected by slugs, which have previously fed on diseased plants. The larvae of the Cabbage-butterfly also carry the disease in a similar manner. A second mode of infection, independent of the aid of animals, and without the presence of a broken surface of the leaf, occurs when the *Pseudomonas* happens to come in contact with the minute drops of water exuding, during the night, from the water-pores situated on the margin of the leaf. These pores are large enough to allow the organism to pass into the interior of the leaf. Rape and Radish are also susceptible to the disease. The preventive methods suggested, are (1) The cultivation of Crucifers on land not infected with the disease; (2) Prompt removal and destruction of diseased plants; (3) A constant war upon insect enemies and other possible carriers of the disease. *G. M.*

VEGETABLES.

NEW POTATOS.

IN order to obtain "new" Potatoes during the last three months of the year all that is required are some garden frames or brick-pits, and a sufficient number of sets selected in the spring to fill them, placing the sets in an upright position in shallow boxes, and storing them, till planted, in the coolest place possible, which at Rolleston is the passage leading to the Ice Well, where they do not push out growths to any appreciable extent. Towards the end of June the boxes of sets are placed in the Potato-shed, and gradually accustomed to the light; they are then planted in frames, &c. in the usual manner—making one planting early in July, and another 14 days later. The soil is sometimes very dry, and it must be sufficiently moistened by being afforded frequent applications of water a week or more previously to planting the sets. No protection is of course required till early autumn frosts are feared, when sufficient covering should be employed to protect them from injury. In the daytime, when the weather has got cool, or heavy rain is apprehended, the lights should be made use of; and at other times the plants should be fully exposed. The sets should be planted rather thickly in the rows, and the latter about 15 inches apart. Planted in this manner, and at the dates given, good crops of medium-sized tubers will be produced that are fit for the table during the last three months of the year. Three trustworthy varieties to plant are Veitch's Improved Ashleaf, Sutton's Ringleader, and Sharpe's Victor. *G. Woodgate, Rolleston Hall Gardens, Burton-on-Trent.*

Obituary.

D. E. H. BOXMANN, a prominent Dutch amateur, died at Oudwijk, his residence, near Utrecht, on November 18, in his fifty-eighth year. The deceased was possessed of a considerable Orchid collection.

JOHANN N. HAUSER, the oldest florist of New York, died on October 24, in his eighty-first year. He was a native of Bavaria, and practised as a youth chiefly in Leipzig, Vienna, and Paris. He enjoyed as a young man of twenty-five years a good reputation as a landscape-gardener, and as such he was placed in charge of one of the royal gardens in Paris, which appointment he retained till 1844. He then emigrated to New York, and in company with a Parisian friend established a plant-nursery, of which, owing to the death of his partner, five years later, he became sole owner. Hauser's specialty was Camellias; and notwithstanding the introduction of improved varieties of Roses and Chrysanthemums, and of Orchids, the Camellia remained his favourite flower to the last. *Möller's Deutsche Gärtner Zeitung.*

DAVID MCEWEN—East Anglian readers of the *Gardeners' Chronicle* will learn with feelings of regret of the decease of Mr. David McEwen, who for the past twenty-nine years carried on a business as

seedsman and florist in Red Lion Street, Norwich. He started his business career with the late firm of Mackie & Ewing, seedsmen, of Exchange Street, and later on, taking over the management, he stayed with that firm for upwards of twenty-two years, gaining the respect of both employer and employed, whilst his qualifications as a business man were shown by the firm's numerous customers. On Mr. McEwen leaving this firm he was the recipient of a handsome testimonial in acknowledgment of the long and honoured services he had rendered. The deceased, who was in his seventy-ninth year when he died, was known far and near as an authority on horticultural seeds.

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 14.—On Tuesday last, in the Drill Hall, James Street, Westminster, took place the last meeting for the year of the Committees of the Royal Horticultural Society. Though the day proved to be a more agreeable one than was expected, the weather immediately prior to Tuesday was so adverse, that a larger exhibition than was witnessed could hardly have been anticipated. Chrysanthemums, though less imposing than of late, still lingered to vie with the bright zonal Pelargoniums, the Primulas, Euphorbias, Calanthes, Cyclamens, Carnations, Cyripediums, and other Orchids, and the magnificent Socotrana hybrid Begonias. The work before the Floral Committee proved to be very little, occupying but a few minutes, and one Award of Merit and no First-class Certificate was granted. Before the Fruit Committee there were staged several collections of Apples, a good number of Tomatoes, and a few vegetables.

Professor HENSLOW delivered a lecture upon "Sports in Chrysanthemums," alluded to in another column.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. H. B. May, Chas. E. Pearson, Rich. Dean, J. H. Fitt, Geo. Stevens, Jno. Hudson, J. F. McLeod, Thos. Peed, J. Jennings, C. J. Salter, Chas. Jeffries, W. Bain, Geo. Gordon, Chas. E. Shea, H. J. Jones, H. J. Cutbush, Ed. Beckett, R. M. Hogg, Jas. Walker, Ed. Mawley, G. H. Engleheart, Geo. Paul, Chas. Blick, and H. Turner.

A pretty group of plants of the winter-flowering Begonia Gloire de Socaux, interspersed with a few Dracenas and other foliage plants, was staged by Mr. W. Farr, gr. to A. PEARNS, Esq., Spring Grove, Isleworth. This Begonia has attractions beyond its very pretty flowers, in the dark metallic-like, but handsome, foliage it possesses. From the same garden was exhibited a large group of Euphorbia (Poinsettia) pulcherrima plants, carrying developed bracts (Silver Banksian Medal).

A white flowering Carnation, probably a selection from the C. Marguerite named Miss Lilian Hillier, was shown by Messrs. E. HILLIER & SONS, 95, High Street, Winchester.

Mr. JAS. BRYSON, nurseryman, Helenburgh, showed several varieties of single-flowered Chrysanthemums, but none of these was of exceptional character.

Messrs. JAS. VEITCH & SONS, Royal Exotic Nursery, King's Foad, Chelsea, displayed varieties of their new type of Begonias, crosses between the tuberous section and the species B. Socotrana. An Award of Merit was recommended on this occasion to Winter Cheer, from B. Socotrana ♀, and a tuberous variety ♀. The flowers are produced in abundance in large trusses, and are warm rosy-carmine in colour. The growth is erect, and the leaves green. Its valuable character is attested by the wealth of colour produced at such a season. The Ensign, a semi-double variety, previously exhibited here and certificated, was also shown.

Messrs. HUGH LOW & CO., Clapton, and Bush Hill Park Nurseries, Enfield, exhibited a group of Cyclamens, and some pretty plants of Winter Scarlet Carnation. This winter-flowering variety is very fine in colour, and has a non-bursting calyx (Bronze Banksian Medal).

Mr. H. J. JONES, Ryecroft Nursery, Hither Green, Lewisham, made, we may conclude, his last display of Chrysanthemums for the season. Exhibited in his usual manner, some of the blooms were quite fresh and good in colour; others, however, had evidently already been open for some time (Silver Floral Medal).

A group of Chrysanthemum-plants was staged by J. W. TEMPLE, Esq., Leyeswood, Tunbridge Wells (gr., Mr. F. Cubberley). It was composed of the variety Princess Blanche, a white or very pale rose-coloured decorative bloom, and a yellow sport from same known as Janet Shehan. They were capitally grown bush-plants, dwarf, with nine or a dozen stems upon each, and one bloom upon a stem. The foliage was healthy-looking to a degree; the blooms, however, had been brighter and fresher than when staged (Silver Floral Medal).

Double-flowered Primulas were shown by Messrs. W. COTBUSH & SON, Highgate, London, N. This group of plants, mostly in 6-inch pots, included the varieties Princess,

double white or faintly tinted, and Marchioness of Exeter, double rose (Silver Banksian Medal).

Messrs. H. CANNELL & SONS, Swanley, Kent, put up a few sprays of their choicest zonal Pelargoniums, and relieved the same very tastefully with Adiantum Ferns. The only pure white one was Niagara; then follow white and pink or white and rose, in Mrs. Simpson (a novelty), Duchess of Marlborough, and Lady Tennyson. Shaded varieties are Dryden, Madame Hoste, and Countess de Morella. Fine scarlets were noticed in Lord Farrer, Harriack, and Soldier's Tunic; crimsons, in Nicholas II. (a novelty), King of Crimsons, and Shelley; purples, in Lord Reay (a novelty) and Royal Purple. The variety Owen Thomas, a very bright scarlet flower with pure white eye, is very deserving of mention (Silver Banksian Medal).

That pretty stove-trailer, Cissus discolor, occasionally flowers when making long vigorous growths, but not frequently. It was shown blooming profusely by W. C. WALKER, Esq., Percy Lodge, Winchmore Hill (gr., Mr. Geo. Cragg). The flowers are not very conspicuous, but they add to the attraction and interest of the plant to some extent.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. J. O'Brien (Hon. Sec.), De B. Crawshaw, H. M. Pollett, H. Ballantine, W. H. White, H. J. Chayman, W. H. Young, F. J. Thorne, E. Hill, J. Douglas, T. W. Bond, T. Statler, C. Winn, S. Courtauld, and T. B. Haywood.

The last meeting of the year was graced by a large display of winter-flowering Orchids. Sir TREVOR LAWRENCE, Bart. (gr., Mr. W. H. White), staged an effective group, in which groups of the newer hybrid Calanthes formed the chief feature. Among them the most brilliant rosy-crimson variety was Calanthe × Burfordensis (Award of Merit); and scarcely less effective was the showy C. × Veitchi splendens (Award of Merit). C. × varicolor, white, with an eye of a delicate peach blossom shade of pink; C. × Bryan, white, with dark purple eye; C. × amabilis, pale rose; C. × Veitchi lactea, a pale white; C. × Wylamiana, a charming variety; C. × porphyrea and C. × sanguinaria, a dark crimson variety, which also secured an Award of Merit. Among the other exhibits in this group that were remarkable, mention may be made of "Brasso-Catt-Lelia × Lindleyana elegans" (Brasso-Catt-Lelia × Lindleyana × Lellio-Catt-Lelia × elegans), a hybrid that affords an idea of the complication in form of flower and leaf, &c., likely soon to arise. It bore an inflorescence of pretty flowers with bluish-white sepals and petals, and dark purple labellum (Award of Merit); Masdevallia corniculata, with numerous inflated yellow and red flowers (Botanical Certificate); M. irrorata; a fine specimen of Platyclinia uncatia; a grand example of Bulbophyllum Medusa, with ten large heads of flowers (Botanical Certificate and Cultural Commendation); Dendrobium cymbidifolios, with numerous sprays of singular-looking white flowers (Cultural Commendation); Cyripedium × Leeanum giganteum, C. × Laurebel, C. × concolor-bellum, and C. × callo-bellum; the rare Milionia Endresii, a fine variety of the remarkable M. Russelliana; Masdevallia Schroderiana, &c. The group was awarded a Silver-gilt Flora Medal.

Messrs. JAS. VEITCH & SONS, Ltd., Royal Exotic Nursery, King's Road, Chelsea, were awarded a Silver Flora Medal for an attractive group, consisting principally of new or rare hybrid Orchids. Of these shown for the first time were Lellio-Catt-Lelia × Loucusta (C. bicolor ♀, L. harpophylla ♂), a charming novelty with sepals and petals of a clear yellow tint; the lip having the cream-white side lobes folded over the rather thick column, and the narrow elongated purple front lobe peculiar to C. bicolor hybrids; Cyripedium × Minosa magnificum (Spicerianum ♀, Arthurianum ♂), with very handsome white and purple upper sepal; and C. × Aeson giganteum (insigne ♀, Druryid ♂), a noble flower of great substance, and fairly intermediate between the species used in producing it, the prevailing colours being yellow and reddish-brown (Award of Merit). Also in the group were some good plants of Cattleya × Mantini; three varieties of the pretty C. × leucoglossa, the handsome Lellio-Catt-Lelia × Eunomia, and three fine forms of L-C. × Pallas, Cyripedium × Euryades, C. × Niobe, C. × Enone, C. × Sedem candidulum, and other varieties.

Messrs. HUGH LOW & CO., Clapton, secured a Silver Banksian Medal for a showy group comprising the handsome Cyripedium × Leeanum, Low's variety, a fine rival of C. × L. giganteum; C. × Minos magnificum, the apricot-tinted Lycaste Skinneri armenica, Cyripedium insigne Laura Kimball, C. × Sallieri Hyeaunum, C. × Pitcherianum, Williams' var.; C. × Bellona, C. × Dauthierii, Cymbidium × Winnianum, Dendrobium × Cassiope and D. × Leochlanum, Lelia anceps, Cattleya Percivaliana, Oncidium anthocrene, Cynorchis Lowi, Angreum sesquipedale, &c.

Messrs. F. SANDER & CO., St. Albans, staged a group of good hybrid Calanthes, &c., noteworthy being Calanthe × Bryan, C. × Florence, C. × Victoria Regina, and C. × Bella, all very handsome and effective varieties; Phalo-Calanthe × Arnoldii superba, a very pretty flower, with greenish-white sepals and petals, tinged with pink, and lip closely marked with rose-purple, formed part of the group.

Messrs. B. S. WILLIAMS & SONS, Victoria and Paradise Nurseries, Upper Holloway, staged good examples of Odontoglossum polyanthum, Oncidium tigrinum and O. varicosum, Calanthe × bella, C. × Veitchi alba and C. × Oweniana; the last-named having flowers of a peculiar tint of carmine-rose, with some cream-coloured markings; Cyripedium × calophyllum, C. × Harrisianum var., C. insigne albo-marginatum, C. i. Maulei, C. i. Mrs. Wils n, C. i. punctatum

violaceum, C. × Leeanum superbum, C. × nitens superbum, C. × Sallieri, Zygotopetulum Mackayi, &c.

Sir FREDERICK WIGAN, Clare Lawn, East Sheen, Richmond (gr., Mr. W. H. Young), showed the fine Trichoplia brevis illustrated in the *Gardeners' Chronicle*, Nov. 30, 1895, p. 641 (Award of Merit); the clear white Maxillaria grandiflora alba, and the large and distinctly marked C. insigne Wigan's variety, characterised by the very large spots in its broad upper sepal.

Admiral Sir HENRY FAIRFAX, Ravenswood, Melrose, sent a fine variety of Lelia anceps, which might be called an improvement on L. a. Amesians.

DE B. CRAWSHAW, Esq., Rosefield, Sevenoaks (gr., Mr. S. Cooke), showed Lelia anceps, Mrs. de B. Crawshaw, a very large and handsome form, especially remarkable in the dark purplish rose colouring of the sepals and petals (Award of Merit).

C. J. LUCAS, Esq., Warnham Court, Horsham (gr., Mr. Duncan), showed the fine Lelia anceps Schrodern; and Baron SCHRODER, The Dell, Staines (gr., Mr. Ballantine), showed Lelia anceps Chamberlainiana, still the largest and best of its class.

Mr. JAS. DOUGLAS, Edenside, Great Bookham, sent Lelia × Briseis (harpophylla × purpurata), a very curious and pretty hybrid, with sepals and petals of white, tinged with lemon-yellow, and a narrow white lip bearing slight rose-colour marking on the front lobe—a singular and pretty hybrid (Award of Merit).

W. THOMPSON, Esq., Walton Grange, Stone, Staffordshire (gr., Mr. W. Stevens), showed Cattleya × Miranda (Trianae ♀, guttata Prinzl ♂), with rosy lilac sepals and petals, slightly spotted with purple; the front lobe and tips of the side lobes of the lip being rich claret-purple colour. R. W. RICKARDS, Esq., The Priory, Usk, showed Lelia purula superba, the largest and best form of the species shown this year (Award of Merit). H. DAUCE, Esq., The B-ches, Circus Road, St. John's Wood (gr., Mr. Walker), sent a singular form of Oncidium varicosum, with abbreviated labellum, the base and sides of which were coloured red-brown. MALCOLM S. COOKE, Esq., Kingston Hill (gr., Mr. W. Buckall), showed two good varieties of Oncidium Forbesii. J. T. BENNETT-POE, Esq., Holmewood, Cheshunt (gr., Mr. Downes), sent the fine white Calanthe × Harrisii, which was accorded a First-class Certificate.

THOS. McMEKIN, Esq., Falkland Park, Norwood (gr., Mr. A. Wright), showed Cyripedium × Mrs. Geo. Bollerill (Lathamianum × Savageanum superbum); and C. insigne, Falkland Park variety, both fine flowers.

Mr. T. DUCK, Abbey Wood, Kent, showed Cyperorchis Mastersii album, with entirely white flowers.

WALTER C. WALKER, Esq., Percy Lodge, Winchmore Hill (gr., Mr. Geo. Cragg), showed Lelia rubescens (Award of Merit); a very fine variety of L. albidia, and an inflorescence of Odontoglossum cirrosum with foliaceous bracts.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, showed ten basketsful of Cyripediums in good health, grown in a house where the temperature often falls to 40° Fahr. The foliage was very short and thick, and flowers good. They were C. Spicerianum, C. × Ashburtoniae, C. × Harrisianum, C. insigne Wallacei, C. i. grandiflorum, C. i. albo-marginatum, C. i. Sylhetense, and C. i. Chantini (Vote of Thanks).

WALTER CUBB, Esq., Dulcote, Tunbridge Wells (gr., Mr. Howes), showed a fine plant of Cyripedium × J. Howes (Sallieri Hyeaunum × villosum aureum), a grand improvement on the best form of C. × Sallieri.

F. W. MOORE, Esq., Royal Botanic Gardens, Glasnevin, Dublin, sent Oncidium saltabundum (Botanical Certificate), Maxillaria mirabilis, M. punctata, and a pretty unspotted variety of the same; a fine large form of Cyripedium insigne, and a yellow C. insigne near to C. i. Ballie, but larger; and Vanda lamellata Boxallii.

Fruit Committee.

Present: Philip Crowley, Esq., Chairman; and Messrs. W. Pope, J. Wright, A. F. Barron, Jas. H. Veitch, Jos. Chal, Geo. Bunyard, Alex. Dean, J. W. Bates, W. Farr, Geo. Woodward, W. J. Empson, Jno. A. Laing, Geo. Wythes, H. Balderson, Robt. Fife, F. Q. Lane, Geo. Reynolds, and J. Willard.

Sir TREVOR LAWRENCE, Bart., Burford Lodge, Dorking (Mr. Bain, gr.), showed fine roots of Celeriac Geant de Prague, (Award of Merit); Celeriac a feuille panachee, and two heads of the delicious Couve Tronchuda or Braganza Cabbage (Cultural Commendation).

Mr. A. OUTRAM, 7, Moore Park Road, Fulham, S.W., showed Celery Jubilee Red, a variety resembling Major Clarke's, but with finely-cut leaves.

Miss BASTON, Sandhurst, Berks (Mr. R. Handley, gr.), showed three Cardoon-stems, and some small-sized Yams, looking like Dioscorea batatas.

A dwarfish Celery, named Sutton's Solid White, was shown by Mr. WRIGHT, of the Royal Horticultural Society's Gardens, Chiswick. It was particularly tender, and pleasant eating (Award of Merit).

Mr. J. CROSS, Bury St. Edmunds, showed a Celery called Victoria Pink, a strong-growing variety.

Mr. S. MORTIMER, nurseryman, Rowledge, Farnham, had a fine exhibit in a dozen boxes of fine-looking Tomatoes—Selected, Conqueror—of a glistening crimson colour, obtaining a Silver Banksian Medal for the exhibit.

Mr. O. THOMAS, gr. to the QUEEN, Frogmore, showed a new variety of Cucumber, All-the-Year-Round, which has been previously noticed in these columns. The six fruits shown were capitally developed for the season, and had the bloom still remaining on each.

Mr. H. BEARWICK, Sidmouth Nurseries, Sidmouth, showed a collection of Apples, numbering fifty-six dishes and varieties, receiving a Silver Knightian Medal in recognition of their merit. The collection contained many of our best dessert and culinary varieties, as well as some others seldom seen about London, as Reineette d'Osabruck, Roundway Magnum Bonum, Winter Majestic, and Tom Putt.

A small collection of Apples came from the Earl of GALLOWAY's garden, Galloway House, Gariestown, N.B. (gr. Mr. J. Day). They were very good produce for a garden so far north, and included Warner's King, Peasegood's Nonsuch, Wellington, Tower of Glamis, Galloway Pippin, Bramley Seedling, and Loddington, these being the largest fruits. Blenheim Orange, Ribston, Fearn's and Cox's Orange Pippins, and Golden Noble were much below the size obtained in the South, but in other respects they were good examples. Some good specimens of Allia Craig Onion, from seed sown on February 25, and transplanted to the open ground April 28, came from this exhibitor (Silver Banksian Medal).

PEAR AND APPLE COMPETITION FOR FLAVOUR.

Pears.—1st (Award of Merit), to the variety President Barabe, a medium-sized, obovate fruit, with a russet yellow rind, shown by Mr. Allan, gr. to Lord SUFFIELD, Gunton Park, Norwich; 2nd, Winter Nellis, shown by Mr. G. Wythes, gr. to Earl PERCY, Syon House, Brentford.

Apples.—1st, Adams' Pearmain, shown by Mr. C. Herrin, gr. to the Hon. G. M. FORTESCUE, Drogheda, Maidenhead; 2nd, Cockle Pippin, shown by Mr. C. Ross, gr. to Col. A. HOUNSLOW, Welford Park, Newbury.

The number of dishes shown in these competitions was about twelve of Pears, and twenty of Apples.

NATIONAL ROSE.

Annual Meeting.—Dec. 9.

REPORT OF THE COMMITTEE FOR THE YEAR 1897.

THE great event of the past year, the celebration of Her Majesty's Diamond Jubilee, has, in one way or another, affected most of the institutions in this country—some beneficially, others the reverse. The National Rose Society has not escaped its influence. It materially affected our southern exhibition at Portsmouth, even to the altering of the date, which was originally fixed for the day after the Jubilee celebration. As it was felt impossible to hold the show under such circumstances, the fixture, at the request of the local committee, was changed to June 18. This is the earliest date on which a provincial show has ever been held by the Society. The exhibition proved an unusually small one, while the attendance of visitors, no doubt in some measure owing to the stormy weather during the afternoon, was also very limited. The fine display of garden Roses was a noteworthy feature of this exhibition. Everything that could be done under the depressing circumstances of the day was carried out by Captain Ramsay, our local secretary, who not only gave his valuable services, but also a Silver Cup in the leading class for amateurs. The committee are also greatly indebted to the kind hospitality of Mr. Alderman Evans, who kindly entertained the judges and principal exhibitors to a luncheon in the Town Hall.

The metropolitan show at the Crystal Palace was also affected, but not in the same way, by the Jubilee celebration, for the Palace Victorian exhibition occupied the whole of the nave. Consequently, that of the National Rose Society had to be relegated to the central transept and the concert room, the latter a most unsuitable position for a Rose show, particularly on such a dull day as that on which the exhibition this year took place. It was the largest show that the Society has yet held, no fewer than 7200 blooms having been staged on that occasion in addition to the many beautiful stands of garden-Roses.

The northern show, which was held at Norwich, in the grounds of Mr. J. J. Colman of Carrow Priory, was a most successful one, and attracted a larger number of visitors than any previous summer exhibition of the local Society. The arrangements were, on the whole, excellent, and reflected great credit on the committee of the Norfolk and Norwich Horticultural Society, and especially upon their energetic secretary, Mr. J. E. T. Pollard.

Early in the year application was made to the different railway companies for a reduction in the rates charged for the carriage of Rose-boxes, with the result that, although no reduction was granted, there is now a uniform rate charged on nearly all lines throughout the country, which previously was far from being the case.

It is with much regret the committee have to record the deaths of two of their oldest members—Dr. Robert Hogg, a Vice-President of the Society, and one of its original founders, who for many years took a warm interest in its welfare, and frequently presided at the meetings; and the Rev. E. N. Puchin, who in the early days of the Society was not only a member of the committee and a constant exhibitor, but also a leading authority on all matters connected with the Rose.

FINANCE.—The financial position of the Society must be regarded as satisfactory, considering how greatly most societies of the kind have suffered this year through the many demands upon their members' pockets owing to the celebration of Her Majesty's Diamond Jubilee. The year was begun with a balance in hand of £76 12s. 3d.; and now, after paying all outstanding expenses, including £495 in

prize-money, there remain £30 18s. 7d. in the Treasurer's hands.

The sale of publications realised £8, which is more than in any previous year.

ARRANGEMENTS FOR 1898.—Various suggestions have been made with a view to increase the efficiency of the Society, and these are now engaging the attention of the Committee. The engagement for the coming year are likely to prove unusually satisfactory, as the provincial exhibitions will be held in places which the society has already visited, and where large Rose shows are each year being held. The southern exhibition will take place at Bath, in conjunction with the Bath Floral Fête and Band Committee, on Thursday, June 23. The metropolitan show at the Crystal Palace on Saturday, July 2, when, we are informed, there is every prospect of the nave being once more placed at the disposal of the society. The northern exhibition will be held at Halifax, under the auspices of the Salterhebble and District Rose Society, on Thursday, July 14.

A Rose Conference will take place at each of the provincial exhibitions, when some subject of interest in connection with Rose culture will be discussed. A report of the Conferences will be afterwards published, and issued to the members later in the year.

MEMBERS' PRIVILEGES.—Members subscribing £1 will, as usual, be entitled to two private view and four transferable tickets, the latter admitting at the same time as the general public; while subscribers of 10s. are entitled to one private view and two transferable tickets. Each of these tickets is available for any one of the society's exhibitions. Members joining the society for the first time in 1898 will also receive copies of the following publications: The official catalogue, the supplement to the catalogue, "Hints on planting Roses," and the "Prize Essay on the Hybridisation of Roses," also the reports of the two conferences as soon as issued. Members alone are entitled to compete at the society's exhibitions.

The committee, in conclusion, express their best thanks to their local secretaries, also to the donors of special prizes. Of the former Mr. H. P. Landon has distinguished himself by obtaining more new members for the society during the last three years than any of his fellow secretaries. Among the leading donors of special prizes may be mentioned the Right Hon. Lord Pensance, the Mayor of Norwich, Dr. S. P. Budd, Mr. C. J. Grahame, Captain Ramsay, Mr. C. E. Shea, Mr. A. Tate, and the Trustees of the Prince Memorial Fund.

SCOTTISH HORTICULTURAL ASSOCIATION.

DECEMBER 7.—This society met on the above date at St. Andrew Square, Edinburgh, to hear the last paper of the session of 1897, entitled "Exotic Ferns, their Propagation and Culture," by Mr. R. B. WRIGHT, Wariston Nurseries, Edinburgh. The paper, which was a comprehensive one, treated the subject in an exhaustive manner, beginning with a description of the order Filices, and giving an account of their habitats. After giving a few hints upon the best modes of propagation and cultivation, Mr. Wright gave an alphabetical list of the genera, pointing out their characteristics, and at the same time referring to anything specially necessary for their successful culture. At the close of the paper, several of the many members present took part in the discussion, and the reader of the paper was given a cordial vote of thanks for his instructive essay.

Among the exhibits were some fine Chrysanthemum blooms of a golden sport, especially suitable for cutting purposes, shown by Mr. A. PORTER, Davidson Mains, Midlothian. A splendid bloom of Mrs. C. BLICK was also upon the table from Mr. MURRAY, vice-president of the association.

As showing the rapid growth of membership in this society, it may be mentioned that thirty-five new members were proposed and seconded for election. At the close of the meeting, the Treasurer, Mr. ALEX. MACKENZIE, stated that the financial aspect of the last Chrysanthemum show was most satisfactory; and the President, Mr. TODD, read out a list of institutions to be benefited by the surplus proceeds. This sum was allocated as follows by the Council:—£100 to the Royal Infirmary, Edinburgh; £50 to Sick Children's Hospital, Edinburgh; £50 to Royal Ga'deners' Orphan Fund; and £50 to the Royal Gardeners' Benevolent Institution.

Before the meeting broke up, a telegram was received and read to the members by the President from the National Chrysanthemum Society, congratulating them upon the success of the last show, the Secretary, Mr. R. Laird, having gone to London to represent the Scottish Horticultural Association.

NATIONAL CHRYSANTHEMUM.

DECEMBER 7.—Though a good number of subjects was staged on this occasion, only one Certificate of Merit was awarded, viz., to incurred Miss Phyllis Fowler, a large full flower with good smooth petals of a pale soft yellow tint. This variety came from two or three exhibitors, and it being a rule with the society that the one showing the best should have the Certificate awarded to him, who, in this case, was Mr. T. ROBINSON, gr., Elsfield House, Hollingbourne. It was also shown in good character by Mr. H. J. Jones.

Incurred Egyptian, a deep bronzy-coloured variety, was shown by two or three exhibitors, but the flowers were too coarse at the base to find favour, though it appeared to be a useful late-flowering variety.

Japanese Mrs. M. Simpson, a large white variety, with moderately broad florets, somewhat loose as shown, was Commended.

A semi double, bright, orange-chestnut coloured variety named Duchess Elizabeth, with a slightly bronzy reverse, from Mr. A. F. IGATE, Burhill, Walton-on-Thames, was commended as a market variety on account of its remarkable freedom of flowering in large sprays. A white Anemone-flowered variety named Mrs. Carteret, shown by Mr. H. J. Jones, is also a remarkably free bloomer, but the flowers are somewhat loose.

The variety certificated at the previous meeting under the name of violaceum in perfect good faith by Mr. E. Beckett, under the impression that it was an unnamed seedling, is variety raised by Mr. H. J. Jones, and sent out under the name of Dennis Smith-Rylands, and the name violaceum is therefore expunged.

DEVON AND EXETER GARDENERS'.

DECEMBER 8.—Mr. G. Camp, gr. to Mr. E. BYRON, of Culver, near Exeter, read a paper on "Winter-flowering and Ornamental Begonias," at the meeting of this body on the date given. The lecturer sketched the history of the Begonia from the introduction of *B. nitida* from Jamaica to Kew in 1777, summarising the development of the genus as indoor decorative plants, and giving the characteristics of the leading species and varieties. He mentioned the four methods of reproduction—seed, cuttings, leaves, and bulbils, remarking that raising from seed, where proper appliances were at hand, was easy enough, but it required close attention. Propagation of the leaf was not difficult: the operation consisted of cutting a leaf into small pieces, and inserting each piece sideways in well-drained pots, filled with finely-sifted loam, leaf-mould, and cocoanut fibre refuse, in equal proportions, with a thin covering of silver-sand. Cuttings succeeded in the same kind of compost. He did not recommend bulbils as a means of propagation. When propagation from the leaf was adopted, care should be taken to use well ripened leaves. The early spring was the best time in which to strike the Begonia from cuttings, these consisting of ripened shoots. When rooted they should be plunged in a bed having a bottom-heat of 78° to 82°, shaded from the sun, and kept in a close, moderately moist condition. When established more air is necessary.

Among the many varieties now grown, he recommended those which had been obtained from *B. Socotrana* as being among the most satisfactory. While not in the least disparaging the acknowledged beauty and usefulness of the tuberous-rooted sorts, he regretted that so little attention was bestowed on the fibrous-rooted, the ornamental-foliated, and the fragrant-flowered Begonias, many of these being winter-bloomers, and possessed of gracefulness which made them of much value as decorative objects. Then, again, the broad, hirsute, bronzy, elephant-eared foliage of others made an excellent contrast to *Adiantums*, *Grevilleas*, *Ococos*, and other light subjects in general use in conservatories and warm greenhouses.

NATIONAL DAHLIA.

DECEMBER 14.—The annual meeting of members took place at the Hotel Windsor on the above date, Mr. T. W. GIBBS-STON, the President, in the chair, growers and exhibitors from all parts of the country being present. The tone of the meeting was decidedly buoyant, and there are indications that the Society has passed through one of the most successful seasons of recent years.

The annual report, read by Mr. J. F. HUDSON, the Secretary, dwelt upon the fact that the lack of rain at the beginning of the year made close attention to watering necessary; but later, when moister weather-conditions prevailed, the plants made rapid progress, and in some cases exhibition blooms were produced much earlier than usual. The annual show in September was more extensive than formerly; about 300 entries were made, and the general quality of the flowers was very high, notably in the Cactus section. A special commemorative class was included in the schedule, intended to illustrate the increased development of the Dahlia during the reign of the Queen; and some tasteful decorative effects resulted. New classes for blooms in vases, to show how the Dahlia could be employed for house decoration, were included, and brought several competitors, the feature proving a successful innovation. Some classes were added for those who had not previously won a prize at an exhibition of the society; and these were the means of bringing together creditable exhibits from new members, and they will become a permanent feature in the schedule.

The exhibits of Cactus varieties were numerous, there being a marked increase among the amateurs; the number of new varieties produced was very large, and several Certificates of Merit were awarded. Some novel varieties have put in appearance, most prominent being *Arachne*, a striped variety, and the first bi-coloured form of good Cactus character. The report concluded by stating that the time had arrived when it would be necessary to exercise the greatest care in awarding Certificates of Merit to new Cactus varieties; and to the loss sustained by the death of Dr. Hogg, one of the Vice-Presidents. It was reported that the large number of 2300 blooms were staged at the last exhibition.

The financial statement, read by the Treasurer, Mr. E. Mawley, showed that the income of the Society from all sources had amounted to £173 18s. 6d., in addition to the balance in hand at the commencement of the year, that the working expenses had amounted to £21 8s. 9d., prizes £139 19s., leaving a balance of £21 1s. 1d. to be carried forward.

The Duchess of Sutherland, the Countess of Pembroke, the Countess Sherbrooke, and other ladies were added to the list of patrons. Mr. T. W. Girdlestone was re-elected president, and the Dean of Rochester, Sir Edwin Saunders, and Mr. Thomas Pendered, president of the Wellingborough Dahlia Society, were made vice-presidents. Mr. E. Mawley was elected treasurer; Mr. J. F. Hudson, secretary; and Messrs. F. W. Fellowes, C. E. Wilkins, H. A. Needs, and Dr. Bartrum, were added to the committee. The schedule of prizes was revised, some classes were struck out, and others added, including one for twelve Fancies in the open division; the list of true Cactus varieties also underwent revision, the certificated flowers of the present year being added. The meeting closed with a hearty vote of thanks to the officers, and to the president for presiding.



The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				No. of Rainy Days since January 3, 1897.	Total Fall since Jan. 3, 1897.	Percentage of possible Duration for the Week.	Percentage of possible Duration since Jan. 3, 1897.
	Above (+) or below (—) the Mean for the week ending December 11.	Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since January 3, 1897.				
	Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.	Inch.		
0	1 +	5	27	+ 300	— 19	12 +	217	42.3
1	1 +	4	35	+ 37	— 4	6 +	193	27.9
2	1 +	9	26	+ 98	— 95	3 +	175	23.4
3	1 +	10	34	+ 124	— 111	2 +	164	22.0
4	2 +	12	31	+ 61	— 126	4 +	168	25.6
5	2 +	26	14	+ 252	— 195	6 +	157	24.6
6	2 +	20	12	+ 133	— 92	7 +	209	42.7
7	2 +	24	10	+ 183	— 124	8 +	187	34.9
8	2 +	30	7	+ 261	— 141	16 +	194	47.5
9	0 aver	12	27	+ 75	— 12	7 +	220	38.0
10	1 +	32	11	+ 227	— 92	6 +	206	43.9
* 2 +	43	0	+ 400	— 87	12 +	206	33.8	28

The districts indicated by number in the first column are the following:—

0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.W.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Graining, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending December 11, is furnished from the Meteorological Office:—

"The weather during this period was extremely changeable, with frequent heavy rain in nearly all parts of the Kingdom. Considerable falls of sleet and snow were experienced in the north about the middle of the week. Brief intervals of fine bright weather prevailed occasionally, but these occurred mainly at night.

"The temperature was very unstable, but on the whole rather above the mean in all districts excepting Ireland, N. The highest of the maxima were registered on the 7th, and ranged from 58° in Ireland, S., and 56° in England, N.W., to 51° in Scotland, N. The lowest of the minima which were recorded, as a rule on the 6th, varied from 25° in Scotland, E. to 33° in Scotland, W., and to 39° in the Channel Islands.

"The rainfall exceeded the mean in all districts. In most of the western and northern districts the fall was more than twice as much as the mean. The heaviest aggregate falls recorded during the week were 3.85 inches at Arlington, 3.65 inches at Stornoway, and 3.64 inches at Fort William.

"The bright sunshine was less than the mean in most of the northern and north-western districts, but exceeded it in the extreme south and south-west. The percentage of the possible duration ranged from 30 in Ireland, S., and 28 in the Channel Islands, to 11 in Scotland, W., and England, N.W., and to only 2 in Scotland, N."

MARKETS.

COVENT GARDEN, DECEMBER 16.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and the demand; and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Arums, 12 blooms...	4 0-6 0
Bouvardias, pr. bun.	0 4-0 6
Carnations, pr. doz.	1 0-3 0
Chrysanthemums, p. doz. blooms...	0 6-2 6
— p. doz. bunches	3 0-6 0
Eucharis, per dozen	4 0-6 0
Gardenias, per doz. blooms...	2 0-3 0
Hyacinth, Roman, dozen sprays...	0 6-1 0
Lilac, French, per bunch...	3 0-4 0
Lilium Harrial, per doz. blooms...	4 0-6 0
Lily of the Valley, dozen sprays...	1 0-2 0
Maidenhair Fern, per 12 bunches...	4 0-8 0
Marguerites, per 12 bunches...	3 0-4 0
Mignonette, da. bn.	2 0-4 0
Orchids:—	
Cattleya, 12 bms.	6 0-9 0
Odonoglossum crispum, 12 bms.	1 6-3 0
Pelargoniums, scarlet, per 12 bun.	4 0-6 0
— per 12 sprays...	0 5-0 8
Pyrethrums, per 12 bunches...	1 6-2 6
Roses, Tea, per doz.	6 0-1 0
— yellow (Pearls), per dozen...	2 0-4 0
— pink, per doz.	1 6-2 6
— Safrano, p. doz.	1 0-2 0
Stephanotis, dozen sprays...	4 0-6 0
Tuberose, 12 bms.	0 3-0 4
Violets, 12 bunches	1 6-2 0
— Parme, French	2 6-3 6
White Narcissus, French, 12 bun...	9 0-1 6

PLANTS IN POT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Adiantums, p. doz.	4 0-12 0
Aspidistras, per doz.	12 0-30 0
— specimen, each	5 0-15 0
Chrysanthemums, p. doz. pots...	5 0-9 0
— specimen, or large plants, ea.	1 6-2 6
Dracaenas, each...	1 0-7 6
— various, p. doz.	12 0-34 0
Erihas, various, per dozen...	9 0-18 0
Ficus elastica, each	1 0-7 6
Evergreen shrubs, in variety, doz...	6 0-24 0
Ferns, small, doz...	1 0-2 0
— various, doz.	5 0-12 0
Foliage plants, per dozen...	12 0-36 0
Liliums, various, per dozen...	12 0-18 0
Marguerites, p. doz.	6 0-9 0
Mignonette, p. doz.	4 0-6 0
Palms, various, ea.	2 0-10 0
— specimens, ea.	10 6-34 0

FRUIT.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples (Blenheim Orange), selected, per bushel...	7 0-10 0
— (Wellingtons), selected, bush.	9 0-11 0
— ordinary qual., per bushel...	2 6-5 0
Grapes, Gros Colmar, per lb...	1 6-2 0
— 2nd qual., lb.	1 0 —
— Alicante, p. lb.	1 6-1 9
— 2nd quality per lb...	0 10 1 0
Grapes, Muscats, "Cannon Hall," per lb...	3 6-5 0
— Muscats, selected, per lb...	3 6-4 0
Nuts, Cobs, per 100 lb...	21 0-22
Pine-apples, St. Michael, cases containing 6 to 8 each...	3 6-6 6
— cases containing 10 to 12 ea.	1 6-2 6

VEGETABLES.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, per doz.	4 0-4 6
— Chinese (Stachys tuberosa), per lb...	0 8-0 4
Asparagus (Paris), Green, p. bdle.	4 0-5 0
Beans (Madras), per bush (about 6 lb.)...	2 0-3 0
— French, Channel Islands, lb.	1 0-1 8
Beetroots, p. bush.	1 2-1 6
Capelcum, Chili, p. 100...	1 6 —
Cauliflowers, per dozen...	1 9-2 0
Cucumbers, home-grown, select, per doz.	7 0-8 0
Garlic, per lb.	0 2 —
Horseradish (German), per bundle	1 6-1 8
Mushrooms (Indoor), per lb...	0 6-0 8
Onions (pickling), per pocket...	2 0-3 0
— Dutch, per bag	8 0-3 6
— Albanian, per bag...	4 0-4 6
Radish (long scarlet), Channel Islands, per 12 bunches...	0 6-0 8
Salad, small, per doz. punnets...	1 6 —
Seakale, per punnet (3 to 4 lb.)...	1 3-1 6
Shallots, per lb.	0 2 —
Sprouts, per bushel...	0 6-0 9
Tomatoes, Canary Islands, per case, 40 lb.	12 0 —
— 14 lb.	3 6-4 0

POTATOES.

Second class Potatoes have advanced a shade since last report. Present current prices—Up-to-date, 95s. to 115s.; Maincrop, 85s. to 110s.; Saxons and Bruce, 80s. to 100s.; Dunbar Maincrop, 180s.; Blackland, 72s. 6d. to 80s. per ten; Belgian and Dutch Ware, 3s. to 3s. 6d.; German Ware, 3s. 6d. to 5s. per bag of 50 kilos. John Bath, 82 and 84, Wellington Street, Covent Garden, W.C.

(Remainder of Markets carried forward to p. x.)

NOTICES TO CORRESPONDENTS.

A CANCELLED ENGAGEMENT: F. G. Smith. If you have lost money in a variety of ways, especially in travelling to and fro, you might succeed in obtaining redress in the County Court if you employed a solicitor. Is it worth the cost? You had better consult one before taking legal action.

BOOKS: H. W. C. O. L. The edition will be issued shortly in numbers probably, and in one volume. The old edition can be obtained at the publishing offices of Blackie & Son, London, Glasgow, and Edinburgh.

CANKER ON FRUIT TREES: T. G. The history is this:—The trees are injured by frost, or insect puncture, or other injury, leaving an open wound, in which the fungus spores settle, and germinate; the young plant feeds on the bark, and ultimately causes its death. A heavy undrained soil might naturally favour fungus growth, and cause weakness in the trees, but the fungus is the real cause of the mischief.

CARNATION: H. S. The disease is the red rust, Heterosporium echinulatum. The fungus on the weed is quite different, but we do not know what it is. If you want to know more, send us a better specimen.

CARNATION DISEASED: J. F. See answer to T. B. in our issue for the 11th inst.

CARNATIONS DISEASED: F. R. H. S. The fungus is Septoria Dianthi. Remove diseased leaves, and avoid overhead spraying, keeping the foliage as dry as possible. G. M.

CORDYLINE-LEAF. S. H., Newport. The pest is the ordinary small brown-scale, and from large, smooth leaves such as these, it may be easily removed by sponging with an insecticide, or with the mixture of soft-soap and paraffin, using a small wineglassful of paraffin to a gallon of soapy water, and keeping the mixture well-stirred.

DICKSONIA FRONDS: R. L. The effect probably of dryness of the soil and stem.

ERRATUM.—We are informed by Mr. W. Howe, of Park Hill Gardens, Streatham Common, that he, and not Mr. Gibson, as stated in our report last week, was awarded 1st prize for a collection of flowering, foliage, and berried plants, at the National Chrysanthemum Society's Show.

FUNGUS: W. G. Without knowing more particulars, we cannot give you any information. Send specimens.

NAMES OF FRUITS: W. Prunett. 1 and 4, not known; 2, Blenheim Orange; 5, Warner's King; 6, Maltater.—W. D. Pears. 1, Josephine de Malines; 2, Nouvelle Fulvie; 3, Bergamot d'Esperen; 4, Lamb Abbey Pearmain; 5, Beauchampwell.—W. Thomson. Wyken Pippin.—J. S., Sevenoaks. Apple Rosemary Russet.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—W. S. 1, Phaius grandifolius; 2, Maranta bicolor; 3, Arundo donax variegata; 4, Tradescantia discolor; 5, Eranthemum pulchellum; 6, Zingiber officinale (Ginger) probably.—P. C. P. 1, Jasminum revolutum; 2, Phillyrea angustifolia; 3, Elaeagnus pungens.—F. L. S. Stauntonia latifolia probably, widely different from Dioscorea.

SULPHURING VINES: F. F. We would counsel you not to use sulphur by burning it in the vineries, as although in small quantity it might not affect the woody portions of the plants, the buds would suffer. The precise quantity of sulphur that may be ignited per cubic foot of inclosed air in ainery without injury to the Vines, and yet be capable of destroying insect life, has not been ascertained.

COMMUNICATIONS RECEIVED.—Mark Webster.—H. C.—W. W.—D. T. F.—E. B. B. (Berlin).—H. E. R. (next week).—J. H. (next week).—J. B. T. (next week).—W. W. (5).—J. P. (next week).—H. J. R. Florence (next week).—Probdh Chundra.—H. W., Stuttgart.—O. S.—M. W.—W. M., Berlin.—New York Agricultural Experiment Station.—J. S. S.—Mo. K.—B. B., Exeter.—H. E.—H. E. R.—J. B. T.—Tommy Dod (you are too late for this year, next week).—J. C. T., Scilly.—Q. R.—G. W.—C. T.—W. R.—D. T. F.—C. A. D. G.—A. D.—G. W.—E. M.—H. M.—H. H. R.—H. C.

PHOTOGRAPHS, SPECIMENS, ETC., RECEIVED.—Mark Webster.—W. W.



THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 25, 1897.

THE DATE PLUMS, OR KAKI FRUITS OF JAPAN.

A NEW fruit of good quality and ornate appearance is pretty sure of a welcome from those interested in fruit culture generally, and the wonder is that the brilliant Kaki fruit of Japan (*Diospyros Kaki*) in variety has not been seen more frequently in our gardens and at our fruit shows at this time of the year.

Of course, the tree has been cultivated in gardens here and there throughout the country, and our friend G. F. Wilson, Esq., F.R.S., was successful in obtaining ripe fruit in his well-managed and productive orchard-houses some years ago. (See *Gardeners' Chronicle*, 1875, p. 777, fig. 158.)

When Mr. F. Moore of Glasnevin and myself made a little tour in South France, North Italy, and Switzerland in 1892, one of the most remarkable of all the public gardens we saw was the Acclimatisation Botanical Garden at Hyères, near Toulon, with its Bamboos and Agaves and rare Palms in the open air, under a blazing sun, set in a cloudless sky.

We wandered about alone, for it was the sacred siesta-time with the officials and gardeners, and gazed delightedly on the blue Agaves, the feathery plumes of Bamboos, *Arundinarias*, *Phyllostachye*, &c., and for some time were quite non-plussed in our attempts to recognise our old friend the *Laurustinus*, so disfigured was it by the burning sun and red-spider. A fine specimen of *Brahea Roezli*, perfect in health, and blue rather than glaucous in colour, delighted us; but of all the novelties, nothing perhaps struck us more forcibly than a plantation of different varieties of *Diospyros Kaki*, young and vigorous, in the open air, and laden with handsome fruits. The trees were grown as standards, and in general appearance looked like large-leaved Greengage Plum-trees, laden with green, yellow, orange, red, and orange-crimson Tomatoes. The difference in size and colour of the fruits, being due in part to the particular variety, and partly to the age and position of the fruit itself on the tree.

The Kaki, or Date Plum, is one of the most popular of all Japanese fruits in its season, and is also highly appreciated by the Chinese. My first experience of it as a dessert fruit was made in Singapore, to which part it is brought down, I believe, by ships from Hong-Kong or Shanghai. In China and Japan, this fruit is almost as variable as are the Apples and Pears of our own gardens, the result, no doubt, of a long course of selection, seminal reproduction, and intergrafting on the part of these oriental horticulturists.

Now-a-days, however, this very distinct and handsome fruit tree has come from the flowery lands of the Orient to our South European gardens, and both French and Italian nurserymen offer collections of all the best fruiting kinds, some fifteen or twenty in number, at a very moderate price.

When, at the instigation of Dr. E. Perceval Wright, the Professor of Botany in Trinity College, Dublin, Mr. Moore and I visited Chevalier Ross in his fine old Palazzo Poggio Gherardo, high up above Florence, on the side near Vallambrosa, we saw there a plantation of very choice young and healthy trees. These are now in full bearing.

The two varieties I send differ in size, shape, and in flavour, the larger one ("Giboushin") being rich orange-yellow, as large as a medium Apple, and marked with sutures, as in the *Diospyros Kaki* var. *costata*, as figured by Carrière years ago in the *Revue Horticole*, and which was one of the first kinds to fruit in French gardens. This variety is as a rule, seedless, though, in this respect, individual fruits may vary even from the same tree. The smaller variety (*Isurunoko*) is smaller, with fruits of a rich shiny crimson-red, like a Tomato; it is rounded, without costae or sutures, and bears four to eight seeds embedded in its rich apricot-like pulp. In flavour the fruit, when soft, or "blotted" properly, tastes like a delicious conserve of Plum, Apricot, and Melon combined into one of Dame Nature's best of macedoines.

For several years past Dr. Wright has received at least one consignment of Kaki fruits from Poggio Gherardo, and this season the fruits seemed finer and more abundant, and of more exquisite flavour than before. To me, Poggio Gherardo, cool and white on the hill-side, standing amidst its Olives and Vines, and Fig trees and Palms and Oleanders, will always be a happy and grateful memory. Apart from the genial humour, hospitality, and generous good nature, which the Chatelaine dispenses to the passing stranger, as well as to her own friends, it would not be easy to forget its artistic charm, the sunlight and shadows which play around its time-honoured walls, the water Lilies and Nile Reeds in the splashing fountain-basin, the lizards that flit amongst the Caper blossoms that dangle from the sloping grey wall. The doves and the song birds even are happy near the roof here, while far below are the miles and acres of red-tiled houses, the great Duomo of Brunelleschi, the campanile of Giotto, the Palazzo Vecchio, past which flows the Arno, every inch of the great city sacred to the memory of Savonarola and Romola, who lived and loved and died in Florence when it was a city fit for kings to admire.

The *Diospyros Kaki* or Loti fruits of Japan, as I said, really deserves a place in English gardens. In the south and west, near the sea, it might thrive and fruit in the open air. Even as far north as Newry, co. Down, Ireland, I know of a plant that has grown for the past ten or twelve years on a sheltered and snug wall. In the Isle of Wight and Hampshire, in Devon and Cornwall, in south and west Ireland, and even in sheltered spots far up the west coast of Scotland, I should expect this tree might thrive with but little protection. It is as a greenhouse or orchard-house fruit, however, that it more especially deserves attention; and as the little trees are now offered cheaply by French and Italian growers, there is ample opportunity for trials being made by those interested in comparative novelties of this kind. Dr. Wright is so interested in the matter that

he has adopted the practical course of obtaining specimens of the trees, and has distributed them amongst the gardens in Dublin and Wicklow, where there is a prospect of their success; and he was fortunate in obtaining strong and healthy little trees, well engrafted, from Fratelli Ingegnoli, 54, Corso Loreto, Milan, who offers a collection of fifteen choice varieties, by parcel post, for 35 lira (frances). F. W. Burbidge.

THE LOST DAHLIA.

THE following extracts from an article by Miss Mitford in *Chambers' Edinburgh Journal* for January 7, 1837, may fittingly be reproduced in this year of Jubilee, more especially because the Mr. Sutton therein mentioned is the Martin Hope Sutton who is still among us, and well remembers the incident mentioned:—

"The autumn before last, that is to say, above a year ago, the boast and glory of my little garden was a Dahlia called 'Phœbus.' How it came there nobody very distinctly knew, nor where it came from, nor how we came by it, nor how it came by its own most appropriate name. Neither the lad who tends our flowers, nor my father, the person chiefly concerned in procuring them, nor myself, who more even than my father or John take delight and pride in their beauty, could recollect who gave us this most splendid plant, or who first instructed us as to the style and title by which it was known. Certes! never was blossom."

"We then visited the nurseries, from Brown's, at Slough, a princely establishment, worthy of its regal neighbourhood, to the pretty rural gardens at South Warnborough, not forgetting our own most intelligent and obliging nurseryman (Mr. Sutton of Reading—Belford Regis, I mean), whose collection of flowers of all sorts is amongst the most choice and select that I have ever known; hundreds of magnificent blossoms did we see in our progress, but not the blossom we wanted."

"Learnedly did I descant with the learned in Dahlias over the merits of my lost beauty. 'It was a cupped flower, Mr. Sutton,' quoth I, to my agreeable and sympathising listener (gardeners are a most cultivated and gentlemanly race); 'a cupped Dahlia, of the genuine metropolitan shape; large as the Criterion, regular as the Springfield Rival, perfect as the Mary, with a long bloom-stalk like those good old flowers the Countess of Liverpool and the Widnall's Perfection. And such a free blower, and so true! I am quite sure that there is not so good a Dahlia this year. I prefer it to Coriune over and over.' And Mr. Sutton assented and consoled, and I was as near to being comforted as anybody could be, who had lost such a flower as the Phœbus."

Eventually the lost Dahlia was found on a manure-heap in the corner of a field a mile away from the garden in which it originally grew. Phœbus is gone, Miss Mitford has departed, but Martin Hope Sutton happily still commands our respectful appreciation.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM SURPRISE.

THE last number of the *Semaine Horticole* contains a page illustration of this variety, remarkable for its short broad segments, marked at its edges with a row of small dark lines, after the fashion of a Picotee.

CYPRIPEDIUM DAUTHIERI.

Mr. Ross obligingly sends us from Florence a flower of *Cypripedium Dauthieri*, curiously distorted. The plant came from a seed-pod, from which also originated a pale and a dark variety of *C. Dauthieri*, together with *C. Dauthieri Rossianum*. In the malformed flower first mentioned the floral axis is twisted, the ovary is wanting, there are two sepals standing

right and left of the centre of the flower, and within these two lateral petals, so diverted from their original position as to be obliquely placed, or nearly front and back, as regards the axis. The column has three perfect anthers, but neither staminode nor stigma.

ODONTOGLOSSUM CRISPUM.

Mr. De Barry Crawshaw kindly puts at our disposal a spike of *O. crispum*, in which all the flowers are distorted, and all in nearly the same manner. The pedicels are upturned, and bear three narrow sepals, three petals of nearly the same form and size; the column is twisted, the ovary abortive. Arrest of development is, of course, the cause of the deformity, but what caused the arrest is more than we can say.

that a lesser degree of heat and drier conditions should prevail at other seasons. The winter warmth of fruiting plants at Syon is 60° to 65° at night, the lower one being probably the better one generally, as the plants grow away freely in the spring, so that the flowering period is past during May or June, with sufficient length of time to allow the pods to ripen in warm weather. The *Vanilla* is a climbing Orchid, which sends out numerous fleshy roots that lay hold of damp surfaces, as the walls or woodwork. From observation made, I am not sure which affords the best results, a wall or a trellis. I think the largest pods come from plants attached to a wall, and earlier ones and in greater quantity from plants on wire supports. It is mostly a matter of fancy; still, few

of the plant is done once or twice daily, according to the weather, and the paths are damped oftener. This is the kind of treatment afforded to old or established plants, but it is very necessary to overhaul the stock of plants yearly, there being a tendency in the plant to much top growth, and to get bare at the bottom, which, if not counteracted, would rob the plant of its roots and end in poor growth and a straggling form of growth. In December, or early in January, some of the upper growths are taken down and placed lower in new material, where they soon make rapid progress, and fruit abundantly the next season. The size of such growths as are selected for planting is of no consequence, as pieces of from 4 to 6 feet in length grow well, and the stronger they are the



FIG. 130.—SORTING AND BUNCHING NARCISSUS BLOOMS. (SEE P. 447.)

(From a Photograph by Valentine & Sons, Dundee.)

CULTIVATION OF VANILLA PLANIFOLIA.

"VANILLA" is not a difficult plant to grow, although the fertilisation of the flowers so as to get pods is not understood by many gardeners. The figure given at p. 307, together with the instructions thereon of the method of securing pods, gave the needful information. I gladly act upon the Editor's suggestion in regard to sending a note on the methods practised for many years at Syon; only last year an additional space was allotted the plant in a new house, and I hope that better results will be obtained than in the old one. I may here state we had losses owing to the break-down of the heating-apparatus in February, 1894, in a time of severe frost, which occasioned the loss of a large houseful of these plants, and the weakening of others. We have now made up our losses, and have the promise of a full crop of pods next season. I need scarcely mention, that to grow *Vanilla planifolia* successfully stove-heat is essential, and more especially whilst in active growth, say from 65° to 70° at night, and a high day temperature, bearing in mind

kinds of plants are at the same time more ornamental and useful. In shade the plant grows well, but gives no fruits. The maturing of the stems is a point of importance, as without it no pods are formed. The plant does not rest on the completion of growth all the winter, but makes some little progress, and the roots being fleshy, should not be starved, and they are active if the growth has not been well matured before the end of the summer or early in the autumn. Two years ago a large house was planted at the front with *Musa Cavendishi*, the temperature for which just suited the *Vanilla*, it being, of course, lower and drier in the winter, and not shaded, and having a large back wall; this was covered with plants of *V. planifolia*, which grew finely. There was a wide walk in the front of the wall, and this was utilised by some large *Nepenthes*, which needed shade. The result was that the back wall was also shaded in the summer, and no crop of pods was obtained, *Nepenthes* and *Vanilla* not doing well together.

The *Vanilla* is started early in the New Year by raising the temperature to 65° to 70° at night, with good rise in the daytime by sunheat to 80°, and the houses shut up early in the afternoon. The syringing

better. It is advisable to place new material to root in yearly, as the old gets sour in a year. The best pods were for many years produced in some glass-houses that were 30 feet high, where the *Vanilla* were attached to the transverse partitions, the houses facing the South, and not shaded at any time. Here the growth became well matured, but few fruit were produced at the base of the plant. This, however, is not the case on walls that are always exposed to the sun.

The plants make good growth in a mixture of fibrous peat, small portion of sandy, fibrous loam, and plenty of charcoal, crocks, and sphagnum-moss. The loam, however, should not be used in very moist houses. A border of 15 inches in width and depth half filled with drainage materials, suits the *Vanilla*, as no plant goes sooner wrong in an ill-drained compost, it being like most Orchids, epiphytal, and the usual rules hold good after root-disturbance. Red-spider should not be allowed to infest the leaves, or these will get first yellow, and finally black. Young stock is best raised from shoots taken off in the early spring, and these may be grown in pots for a time. When a plant is flowering, overhead syringing should

cease, and air may then be given, but not so as to impinge on the plant. The illustration in the *Gardeners' Chronicle*, p. 307, makes it very plain how fertilisation is effected, and it should be closely examined by those who desire to excel. A pod takes from three to four months to ripen, and the precise time to gather it is indicated by the tip turning brown; and if it be not then gathered, it will open, and decay set in. The pods should be placed on a shelf for a few days so as to dry the outer, covering if it be not quite ripe, and then folded in tissue paper and placed in a close drawer. Pods will keep in good condition for years. The present is a good time to commence the culture of this plant. *G. Wythes, Syon Gardens.*

to the flowers unfolding, so as to form what is called a "good show." The consequence of this practice is, that shoots that will form the cuttings, become blanched, and hardly fitted to afford suitable cuttings. Not an instant longer than is necessary should the plants be kept in this crowded state; but as soon as the flowers are cut or faded, the stems should be cut down to within 1 inch of the soil in the case of those varieties which throw up shoots freely. Shy growers should not be cut back closely, as these usually throw out shoots from the stems at some distance from the base. These latter do not certainly make the best cuttings, but have to be made use of in lieu of better ones. Let the pots of stools or roots be stood close to the glass in a cool, airy greenhouse, so as to

them it is necessary that the stems be perfectly matured. The large misshapen blooms frequently observed have been produced on immature stems. The true globular incurved flowers, so desirable, yet so seldom seen at the present time, can only be obtained from plants that have a long season of steady uninterrupted growth. Strike the cuttings early, and let the plants grow steadily, without having recourse to fire-heat at any part of the year. The best kind of cutting is that which is found some distance from the stem of the plant, which gives promise of free uninterrupted growth, and has no visible sign of a bloom-bud in the point of the shoot. The cuttings should be 3 inches long, firm, not sappy in texture, and be cut square across below a joint.



FIG. 131.—A BREAK OF NARCISSUS IN BLOOM. (SEE P. 447.)

(From a Photograph by Valentine & Sons, Dundee.)

FLORISTS' FLOWERS.

SEASONABLE NOTES ON CHRYSANTHEMUMS.

SCARCELY are the flowering-plants out of bloom, than preparations for another year's campaign have to be undertaken. The first matter which claims attention should be the revision of the list of varieties, for even in small collections some of them should be discarded, and better ones purchased. The increase of varieties is so large and constant nowadays, that none but the best in each section need be retained. The first matter which should have attention, is the providing of suitable shoots to serve as cuttings, for there is a very great difference as regards the plants raised from good or bad cuttings. Weak shoots cannot be expected to make as good plants as strong ones, and a good start is, therefore, of great importance. Large, high-class blooms for exhibition, as well as for the decoration of the conservatory or greenhouse, seem to be desired by most gardeners nowadays. The plants, as a rule, are restricted to three blooms each, and placed close together previous

enable them to gain that degree of strength and stockiness so desirable in a good cutting. Afford water sparingly—just enough to keep the soil moist; too much induces a paleness in the leaves, which should be avoided.

In some instances it will be found that the shoots spring up from the roots so thickly as to crowd each other, and become weak, rendering a timely thin-out necessary. Close watch must be kept for aphides, green and black, that are apt to infest the succulent shoots, crippling the leaves, and thus retarding growth. To destroy these pests, let the plants be fumigated on two successive nights with tobacco, or dusted with powdered tobacco. The shy varieties may be induced to grow at the base by the aid of mild bottom-heat in a warm house, the stems being syringed daily with tepid water.

The best time to put in cuttings so as to obtain fine blooms is the present or early in the new year, as by so doing the growing season is made as long as possible. If cutting-making is deferred till February or March, a firm matured growth cannot be obtained in a natural manner; and in the case of the incurved Chrysanthemum

Some growers cut out the buds or eyes from the lower part of the cutting, to prevent the growth of suckers in the summer; but this is neither necessary nor wise, because the production of suckers in a proper manner does not interfere with the well-being of the parent plant; and where is the stock of cuttings to come from for another season, if such strict measures are taken to prevent their growing at all?

Under handlights, or in a propagating-frame in a house having a temperature of from 40° to 50°, is the best place to strike the cuttings in. These should be placed on the side stages of the house as near to the glass as possible. Means should be taken to have the handlights as nearly air-tight as possible, as a means of preventing the flagging of the leaves. I find roots are more quickly formed under these conditions than when the cuttings are placed on shelves near to the glass in an ordinary greenhouse, where being greatly exposed to the air the leaves quickly flag. A layer of coal ashes at the bottom of the handlight forms a level moist base on which to stand the pots. *E. Molyneux.*

(To be continued.)

WEST INDIAN PRODUCE.

OUR friends engaged in the sugar industry, and concerning whom so much has been said and given in the way of advice, would appear to be endeavouring to work out their own salvation from that ruin which but a few months since appeared to be imminent. Advice received from St. Vincent, from Mr. Drayton, shows that improvement is being effected by economies; and it said that, although the colony is passing through a severe crisis, no one who has a knowledge of the resources of the island can doubt that, if a radical change is made in the existing local conditions, which retard its progress, there will be a gradual return of prosperity. It is affirmed that, with a more equitable distribution of the land, a proper system of roads, provision for rapid and safe transport of produce to suitable markets, and a decentralisation of the interests, both public and private, now concentrated in Kingstown, a future perhaps not of great affluence, but certainly of solvent prosperity, lies before this unfortunate possession of the Crown. Speed the time.

THE PRESERVATION OF FRUITS BY VAPOUR OF ALCOHOL.

EXPERIMENTS were made in the fall and winter of 1894 by Monsieur A. Petit at the National School of Horticulture of Versailles (France), in the preservation of Grapes by exposure to the vapour of common alcohol, which, according to report, gave very striking results.

Briefly, the method was this:—Freshly-picked Grapes were placed thinly upon trays of wood-shavings, in order to offer freer access to the alcoholic vapour. These trays of fruits were placed in a large cellar closet, which could be conveniently and securely (not hermetically) closed. A small vessel of alcohol was left uncovered in the room, and the ordinary evaporation from this satisfied the purposes of the experiment. The conditions of temperature and moisture were purposely made the most favourable for the development of mould fungi. Some similar fruit was at the same time placed under the same conditions, with the exception of the alcoholic protection, so as to serve as a check.

The experiment was begun on October 31. On November 20 the Grapes in the check were for the most part rotted and covered with mould. In the case containing the alcohol, on the contrary, the Grapes looked as well as ever—quite firm, not shrunken, and totally free from mould; they had no bitterness or bad taste. On December 7 the Grapes in the case with alcohol had still their fine appearance, though there were one or two small brown spots to be found. On December 24 there were only a few small spots of mould. The Grapes were referred to the judgment of several persons, who unanimously pronounced them very fine. The stems remained perfectly green, and the fruits retained their firmness, their volume, and above all, their flavour. In a word, they showed all the qualities of freshly-picked Grapes.

These statements are quoted from the report of Mr. Petit, made in February, 1895. This report immediately attracted wide notice, both in Europe and America. The first to test and report the method in this country was Goff. His experiments were made with Plums, and showed "that alcoholic vapour is an effectual preventive of the common mould or moulds in a damp atmosphere; but the vapour did not prevent, except for a limited time, if a further change within the fruits that destroyed their value."

The first opportunity found by the present writer for a trial of this method of preservation came May 20, 1896.

Beginning at this date six experiments were made, and the conclusions arrived at were as follow:—

Vapour of alcohol in a closed space will prevent, more or less, the growth of the fungi and bacteria which usually hasten decay. To be effective it must be present in some appreciable quantity. If present in a considerable quantity, the development of fungi

and bacteria may be wholly prevented for several days, or even weeks; but in this case the fruits, especially those with soft flesh, absorb enough alcohol to render them very disagreeable to the taste. The fruit also deteriorates in colour and texture. Although the growth of fungi and bacteria is prevented, other processes of decay seem to be hastened. The method seems to be best adapted to the preservation of Grapes, and it is probable that with sufficient experimentation upon details it might be made practically effective for special conditions. It is thought that this method might be put to practical use in occasional cases for the preservation of some other fruits for a very short time. Thus, Strawberries or Raspberries might be placed in a refrigerator for three or four days with a small open vessel of alcohol, and be preserved in better condition than without the alcohol. F. A. Waugh, in Tenth Annual Report, Vermont Experiment Station.

THE WEEK'S WORK.

THE KITCHEN GARDEN.

By W. H. POPE, Gardener, Highclere Castle, Newbury.

Garlic and Shallots may be planted in a sunny situation, and on a rather light, open soil, if possible, planting the cloves shallow in small drills, and about 1 foot apart each way. In heavy land the drills should be 4 inches deep, and filled before planting with light soil.

Protecting Early Broccoli, &c.—Where the early Broccoli are turning in, it is well to go over the plantations once or twice weekly, and break down a few of the leaves over the heads, or if large enough to cut for use, storing these in a cool shed for a week or ten days. It is advisable, if hard weather seems likely to set in, to cut all heads that are of a useable size, and place them in a cellar out of the reach of frost. The varieties Sutton's Christmas White, Vanguard, and Superb White, are now forming heads, and in succession to Veitch's Self-protecting Autumn Cauliflower and Michaelmas White Broccoli, and those will probably keep up a supply of heads till March. This season has been an exceptionally favourable one for vegetables, excellent Cauliflowers being still procurable from the open ground, as also Lettuce, Endive, &c. At the New Year we may have a fall in the temperature, rendering it necessary to put some kind of protection over beds and rows of Parsley, Celery, &c., and it will be prudent to get materials ready for use whilst the weather is mild. There is no doubt that owing to the late period to which the growth of vegetables has extended, they will be much cut up by hard frosts.

Forcing.—Successional batches of Asparagus, Sea-kale, and Rhubarb, should be got in, in quantity corresponding with the demand. Afford tepid water in abundance to these plants as may be required, the lack of it being the cause of much inferior produce. Light and ventilation are necessary to Asparagus unless the tops are preferred in a blanched state. Hot-beds of prepared manure may now be made up for forcing Potatoes, Carrots, and Radishes. It is a common economical practice to sow Radish seed thinly betwixt the rows of Carrots, and to sow broadcast. This is not the best manner of doing it. A better one is to take two or three seeds between the finger and thumb, and slightly squeeze them in the soil at about 4 inches apart, also in rows; and a still superior method is to have frames or pits devoted to special crops, as it is seldom that interlining has good results. Good varieties are Early Frame, and Sutton's Forcing. French Forcing Carrot should be sown for the earliest crop, the drills being drawn at 1 foot apart if alternated with Radishes, otherwise 9 inches will suffice. When the young plants appear, apply fresh soot to check the ravages of slugs; also set traps for these creatures. Thin the seedlings to 2 inches apart when they have got large enough to handle. Roots of Mint and Tarragon may continue to be placed in mild heat. So in warmth Mustard and Cress at weekly intervals, placing that which is up in cooler quarters. Preparations for sowing Onions may now be made, storing deep in turfy loam mixed with a good quantity of leaf-mould in a frost-proof shed. The seed may be sown in the second week in January.

Plants under Glass Protection.—Cauliflower, Endive, and Lettuce growing in garden-frames or under handlights or cloches, should be freely ventilated in mild weather, removing the frame-lights, hand-glasses, &c., by day, and affording air by night.

Testing Seeds more than One year Old.—The seed-room should now have a general cleansing, and any seeds left over from last season sorted, and those that are not likely to germinate in considerable numbers thrown away. Seeds of Melons, Cucumbers, Parsley, Celery, &c., may be reserved for future sowing, and others about which there may be doubt should be put aside for testing as soon as a hot-bed is available. The seeds of Peas and Beans, if more than one year old, should always be thrown away.

THE ORCHID HOUSES.

By W. H. WHITE, Orchid Grower, Burford, Dorking.

Hot-growing Species.—*Calanthes* of the vestia section form at this season a principal attraction in the Orchid-houses. They require a period of thorough rest, and immediately the spikes are removed place the plants on a dry shelf close to the roof-glass. Coming from very hot countries, these *Calanthes* should be kept in the warmest house, even when resting, and water may be entirely withheld until the plants have been repotted in the spring. Before removing the plants to their resting quarters, each pseudo-bulb should be carefully examined and cleared of the white and brown scale which commonly infest them. The pretty *Eulophia guineensis* should be rested, and treated like the *Calanthes*. Do not forget the *Thunias*, although they are resting. The plants have now cast their leaves, and where eight or ten are grown in one pot, as is generally recommended, the bare stems should be tied upright to neat sticks at even distances apart, so that each may obtain its equal share of light. The bulbs from which the current season's stems have sprung should be cut down to their base. It is perfectly safe to rest the *Thunias* with the deciduous *Dendrobiums*. If such species as *Cyrtopodiums* are grown, it will be seen that some of the growths are nearly completed, and the plants may therefore be gradually dried off, and water entirely withheld when the current season's growths are finished, or they may fail to rest. The plants require the highest temperature available during active growth; but immediately water is withheld, they should be placed with the *Thunias*. *Cyrtopodium Andersonii*, *C. St. Ledgerianum*, and *C. punctatum* are handsome species. Like *Chysis* and the *Angulos*, these plants produce their flower-spikes soon after the new growth commences, and should therefore be very carefully watered when growth has commenced until the spikes appear. If kept too moist at the roots at such period, the growths will become vigorous, but no flower spikes will be seen. *Habenarias*, too, though resting should be examined carefully every week, and any that are dust-dry may be given a slight sprinkling of water on the surface of the soil. The warm-house is the best place for them. Plants of *Odontoglossum citrosum* that have completed their growth should be suspended close up to the glass in the resting-house. After removal, the plants should be kept quite dry at the root, and though the bulbs will shrivel, this will not injure the plant in the least; and when the flower-spikes appear, and moisture is afforded, the plants will quickly regain their normal condition. Under such treatment our plants rarely fail to flower abundantly; even the smallest growths produce flower-spikes. Owing, probably, to climatic conditions, it will be observed that a few plants have already commenced to grow again, but if they are rested and treated as above-described they will make little or no further progress at present. *Peristeria elata*, generally known as the Dove Orchid, succeeds best in a stove-temperature, but immediately the large pseudo-bulbs are mature, the drier atmosphere of the Cattleya or Mexican-house is the best place for it. The plants require a long and complete rest, without which it may fail to flower. *Vandites* is exquisite when in bloom, but many growers have difficulty in getting it to flower satisfactorily. To obtain good results do not subject the plants to the severe drying treatment often advocated, which causes the terete leaves to shrivel, and the lower ones to drop. Our plants are now at rest, and occupy a cool position in the Mexican-house, and they receive sufficient water to keep the stems and leaves plump at all times, and they thrive and bloom profusely every year. The same kind of treatment as regards moisture is afforded to *V. Hookeriana*, but it is grown and rested in the stove.

Temperatures.—The temperature of the cool or *Odontoglossum*-house, when finishing up for the night, is about 50°, falling 2° or 3° by the morning. The atmosphere in this house is nearly always within 3° of saturation point. Each of the divisions should

also be covered with mats in like manner, so that the amount of fire-heat is by night reduced to a minimum. It is always advisable to remove the coverings in the morning as soon as it is light, or immediately the temperature commences to rise. It is very necessary at this season that each house should become dry about noon. The houses at noon are at their maximum temperatures, and it is at this time that ventilation should be afforded, but air should not be admitted in such quantity as will cool them. The majority of Orchids delight in fresh air, but it must not be too cool. To warm the external air before it reaches the plants the bottom ventilators should open immediately opposite and close to the hot-water pipes, the inside of which should be covered with perforated zinc, which will allow the air to pass in small currents, and passing in among the pipes is thus made warm.

PLANTS UNDER GLASS.

By G. H. MAYOOCK, Gardener, Luton Hoo Park, Luton.

Double Primulas.—If these plants have been well cultivated, they will soon produce an abundance of flowers. Keeping the pots resting on a cool base with only sufficient fire-heat to dispel all damp from the atmosphere, which must be kept in a buoyant state. Very careful watering is necessary, and such plants that may have been potted rather too low should not be allowed to suffer from the water lodging in the axils of the leaves. On the other hand, if any plants were not potted sufficiently deep, these may suffer from the thread-like roots at the surface becoming dry. Weakly plants may be assisted with weak manure-water, but if the stock is robust, the plants will do best with clear water only.

The Forcing-house.—Batches of bulbs and plants intended for forcing should be placed in heat at such intervals of time as the establishment requires. If bulbs were potted-up according to previous instructions, they will in most cases be fit for the purpose. *Lilacs*, *Thorns*, *Solomon's Seal*, *Spireas*, *Dielytra spectabilis*, *Guelldres Roses*, *Azaleas* in variety, *Lily of the Valley*, and *Daffodils*, will all be useful. It is not yet too late to pot up additional batches, if it is apparent that the stock is likely to be insufficient, but this is more applicable to plants, not bulbs.

General Work.—Examine at intervals all bulbs that are resting, and remove any that may show signs of decay. Should any bulbs be resting over fires or other excessively hot, dry places, they may require water occasionally to keep them firm. The seed catalogues have commenced to arrive, and orders should be prepared and despatched to the nursery-men at once, that everything may be in readiness before the busy season of spring.

FRUITS UNDER GLASS.

By F. HARRIS, Gardener, late of Eastnor Castle, Leobury.

Pot Vines.—These Vines, now fast breaking into leaf, will require much attention in order to keep them growing and healthy. If not already tied up to their supports, they should be secured to them without delay. Let the bottom-heat be kept steady at the point advised in earlier Calendars, adding fresh materials as may be required. Be sparing with overhead syringing, but damp the floors and walls; and afford ventilation in small amount about noon on mild days, but do not cause draughts in so doing, and if air be afforded with care, growth will be much benefited. Examine the Vines twice daily in order to ascertain the state of the soil as regards moisture, affording water only when it is absolutely necessary; on the other hand, do not let the soil get too dry.

Permanent Vines.—Those which are started must be treated as has been advised, closing the vinery early in the afternoon, and forming a heap of stable litter and leaves in the house. If the soil of the border is dryish, afford water plentifully at a temperature of 85°. The outside border should be protected by a thickness of 1½ to 2 feet of stable manure and leaves previously fermented, covering this with shutters, spare lights, supported above the litter, so that the air may circulate freely underneath. The borders of Vines which still carry fruit may likewise have protection of litter and a covering like the early vinery. It is the better practice to bottle all Grapes at the end of the year and throw open the vineries, except in very hard weather, taking care that the water is kept slightly warm in the pipes. All Vines that have borne a heavy crop should be afforded liquid manure in quantity, especially the inner borders, and the narrower or shallower these are the more manure-water should be afforded. Grapes in bottles should be examined twice a week.

Early Peach-house.—The trees in the early-house are fast coming into bloom, requiring close attention to be paid to the ventilation of the house, so as to secure a good set. In mild weather air may be safely admitted in small quantity by the upper and lower lights if heat be admitted to the hot-water pipes, so as to have a night temperature of 50° to 55°, and by day of 60° to 62°. When the blooms begin to open, slightly damp the floors, &c., about 2 P.M., and stay the use of the syringe. If ripe Peaches are wanted in the month of June, a house may now be started; and in regard to this, all previously given instructions hold good, not forgetting to afford the borders a thorough wetting with warm water, this applying also to all fruit-tree borders that are inside the glass-houses. Push on with the pruning, cleaning and tying of all trees in the later houses before the flower-buds move, and keep the trees at rest as long as possible.

THE HARDY FRUIT GARDEN.

By H. W. WARD, Rayleigh, Essex.

Unnailing Peach, Nectarine, and Apricot Trees.—In order to retard the flowering period, the nails and shreds and twigs which have been employed to keep the young growths close to the wall should be withdrawn, which will liberate the branchlets from the influence of the brick walls, which conserve and radiate the warmth from the sun's rays. Collect the nails and shreds as the work proceeds, and subject them to fire. When cool put the nails into a fine sieve to separate them from the ashes, when they will be again ready for use. By the exercise of timely attention to this matter the prospect of securing crops of Peaches and Nectarines from unprotected trees upon walls is greatly increased. The pruning and nailing of the trees can be done a week or two before the flowers begin to open, so that there will be plenty of flowering-shoots to choose from when pruning.

Pruning and Nailing.—The pruning, training, and nailing of other kinds of trees than those mentioned above should be pushed on during open weather. In the event of frost occurring, such work as wheeling manure on to fruit plots, cropped between the trees with vegetables, and between rows of Raspberry-canes and Strawberries as a mulch. The training and nailing of trees may be proceeded with after breakfast, when the sun has obtained sufficient power to enable those engaged in the work to perform it in comparative comfort. In the afternoon, the declining temperature may render the resumption of the wheelbarrow, or other suitable work necessary.

The Labelling of Fruit-trees.—It is very important that the names of all kinds of fruit-trees, or numbers corresponding to the names in the fruit-grower's book, should be re-written before they become unrecognisable upon the labels. There are many kinds of labels in commerce at the present time. Zinc, written upon with indelible ink (white vitriol); copper, inscribed with a mineral pencil, are both good in their way. They should be secured to the individual trees with fine copper-wire, being careful to leave sufficient room in the ties to prevent them cutting into the bark within the next half-a-dozen years. Labels made of well-seasoned red deal, properly painted, and written on with a hard black-lead pencil, and secured in the manner recommended above, still finds favour with many fruit-growers, including the writer.

Fruit Room.—Carefully watch the Apples and Pears on the shelves in the fruit-room, and remove blemished fruit before they impart infection to others. Apples and Pears keep well in a room having a temperature ranging between 40° and freezing-point (32°). Walnuts, Filberts, Cob-nuts, and Chestnuts stored away in jars and vaults must be made secure against the attacks of mice.

THE FLOWER GARDEN.

By CHARLES HERRIN, Gardener, Drogheda, Maidenhead.

Plants to grow under Trees.—The most commonly planted species for this purpose is probably the Ivy, and the larger leaved varieties are usually chosen. In localities where the soil is not of a heavy clayey nature, two satisfactory plants for the purpose are *Gaultheria Shallon* and *Andromeda Catesbei*. Both are North American evergreen plants, growing from 18 inches to 3 feet in height, but when growing under trees they seldom exceed 2 feet. When once established they increase and spread rapidly over bare spaces, and in woods afford a cover for game. The *Gaultheria* also produces a number of Lily-of-the-Valley-like flowers spikes in May and June, and these are succeeded by handsome purple-black berries, which are freely eaten by the smaller birds and pheasants. Seeds of *Gaultheria* should be sown

in the open ground in early spring or as soon as ripe, but the quickest means of increasing the stock is by division, or rather by lifting the youngest rooted growths that are always found around the outer edges of established clumps. The young growths may be transplanted safely now while the weather remains open, and they become partially established by spring. *Gaultheria procumbens*, a dwarfier and rather more delicate variety, may also be used; it grows freely where the soil is peaty, or where naturally-made leaf-mould abounds. The *Andromeda* is of a closely-allied nature to *G. Shallon*, and requires similar treatment in planting, but rarely produces seeds. *Vincas* in several varieties are excellent subjects for forming a dwarf evergreen carpet under trees; *V. major* and *minor*, with the variegated forms, grow and spread quickly, and may be planted now. When planting under trees, the surface-soil should be broken up with a fork and fresh soil added if a sufficient depth cannot be obtained for planting without interfering unduly with the roots of the trees.

Carnations.—During frosty weather young Carnation plants are liable to become lifted almost out of the ground, and one night's frost is sometimes sufficient to do this, if the plants were not firmly planted. As soon as the ground is free from frost, tread the soil firmly around the plants. A 2-inch mulch of old Mushroom-bed manure or Cocoa-fibre refuse is a protection and preventive. Plants wintering in pots in cold frames should be kept well exposed, except during heavy rains and frost, covering the frames only just sufficiently to exclude the latter.

General Work.—Prepare soils for potting off and propagating various bedding-plants, and place them under cover, where they will become moderately dry. During inclement weather, all dirty pots should be washed and stored in their various sizes in a dry place. Crocks may be broken up, sifted into different sizes, and placed in tubs or bins. Sticks may be pointed, and tied up in sizes in convenient bundles; and pegs made for use in layering, &c. Wood-labels can be bought so cheaply, that their cost is much less than the labour and materials for making them; and old ones are not worth re-pointing for use a second time. Mowing-machines will not be required in use again for some time, and any necessary repairs required should be seen to at once. Where no repairs are necessary, the parts should be thoroughly cleaned, for which purpose paraffin is a useful help; afterwards smearing over all bright steel parts and the bearings with lubricating-oil or vaseline to prevent rusting.

THE DISCOVERY OF COAL.—According to a recent issue of the *Revue Scientifique*, a Belgian journal suggests that this year being the seven hundredth anniversary of the discovery of coal, should be appropriately celebrated. It appears that it was in 1197 that a blacksmith, living in Rue de Choque, Liège, found near Publémont a kind of black earth which he made use of as fuel, wood and charcoal being very dear at the time. This black earth was coal. The blacksmith's name was Hulloz from Plaineveaux, hence the name of houille given to coal. Authenticated documents further prove, says the *Journal des Fabricants de Papier*, the existence of coal-mines in full operation in the principality of Liège in 1228, and in Hainaut in 1229. The use of coal was not introduced into England until the beginning of the 14th century; it was only in 1340 that certain privileged manufacturers obtained the warrant to burn coal (this fuel being then regarded as injurious to the public health), and a century elapsed before it was generally used in houses. In France there was no further advance before the fourteenth century. The coal-fields of Roche-la-Molière (Forez) were open in 1320, and it was the Belgians who took the principal part in commencing operations in the rich basin of the North; the celebrated Ausin mine was discovered on June 24, 1734, by Pierre Mathieu, of Lodeluisart, as his tombstone in the church of that borough testifies. The first edict on mines which speaks of coal in France dates back to June, 1801. Among the other countries of Europe, Austria and Bohemia disregarded until the last century the rich coal-fields which they possessed among their mountains. It was then the Belgians, summoned at the advice of Prince Charles of Lorraine, Governor-General of the Austrian Netherlands, who, in 1757, began the first important investigations in Austria. North Germany, on the contrary, seems to have begun the exploration of its various large coal-fields about the year 1200; but the investigation of the Saxony, Silesian, and Ruhr fields was only developed in the present century.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER.

Local News.—Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.

Letters for Publication, as well as specimens and plants for naming, should be addressed to the EDITOR, 41, Wellington Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith. The Editor does not undertake to pay for any contributions, or to return unused communications or illustrations, unless by special arrangement.

Illustrations.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

THURSDAY, Dec. 30. Continental Plants, Roses, Dutch Bulbs, Herbaceous Plants, Lilliums, &c., at Protheroe & Morris' Rooms.

FRIDAY, Dec. 31. Imported and Established Orchids at Protheroe & Morris' Rooms.

AVERAGE TEMPERATURE for the ensuing week, deduced from Observations of Forty-three years, at Chiswick.—37.5°.

ACTUAL TEMPERATURES:—

LONDON.—December 21 (6 P.M.): Max., 39° Min., 35°.

PROVINCES.—December 21 (6 P.M.): Max., 49°, Valencia (Ireland); Min., 32°, Stornoway.

Large-fruited Perpetual Strawberry.

THE *Revue Horticole* of December 16 contains a coloured illustration and description, by M. H. DE VILMORIN, of a new Strawberry, called "Saint Joseph." This is a perpetual Strawberry, of erect habit, with large fruit, as successional in yield as an alpine variety. It was raised by the Abbé THIVOLET, Vicar of Clanoves, in the Department of Saône-et-Loire, and is said to be the result of a cross between an ordinary and an Alpine Strawberry. M. DE VILMORIN, however, doubts the occurrence of any true cross, as he finds no trace of the Alpine Strawberry in the new variety. The tendency to produce flowers in succession is common enough; as, for instance, in Vicomtesse Héricart du Thury and Belle Lyonnaise. This tendency, which in the varieties named is exceptional, though not infrequent, has become the regular condition in the new variety. Other instances of like nature have been previously observed, e.g., one recorded in the *Revue Horticole*, October 1, 1871, and in January, 1874; but this plant cultivated near Paris produced imperfect flowers only. The Abbé THIVOLET, by renewed fertilisations, effected between his first seedlings and free-fruited varieties, after ten years of experiment, succeeded in producing a variety with continuously-produced fruits of large size, the last of which ripened as perfectly as the first. M. DE VILMORIN has now grown this variety extensively for the last three or four years, and testifies that throughout the whole extent of the plantation the production of flower-panicles has been continuous, so that anyone with, say, thirty plants, could supply himself all through the season with a dish of ripe tasty Strawberries every morning. Abundant watering and good feeding are required to keep up the productiveness of the bed. The figure in the *Revue Horticole* shows that the flower-panicles are provided with leaves, whilst M. DE VILMORIN tells us that the runners themselves sometimes bear a panicle of

flowers. The fruit is of medium size, ovoid-conic, sometimes flattened and crested, and of flavour comparable to that of Vicomtesse Héricart du Thury. Such a variety will be useful for forcing purposes. It may also be pointed out that the edible part of the Strawberry is not the fruit in a botanical sense. It is not the direct product of fertilisation, but merely a swelling of the central axis or receptacle of the flower—a branch, in fact, bearing the true carpels or fruits, which we know as "pips" or "seeds" as so many side outgrowths. These, by the increase in succulence of the receptacle, become more or less embedded in it. The distinction recognised by every botanist from time immemorial, but generally ignored by the public and the gardener, is an important one nevertheless, because the conditions requisite for the ripening of the true fruits are different from those requisite for the growth of the receptacle. A so-called perpetual Strawberry may not necessarily produce a continuous succession of "pips" or seeds even if its receptacle expanded into a succulent mass, and therefore there is not such a drain on the constitution of the plant as might at first be supposed.

Not the least interesting feature attached to this new Strawberry is the connection of a De Vilmorin with it. In this matter, M. HENRI DE VILMORIN is carrying on an old family tradition.

OUR ALMANAC.—According to previous practice, we shall issue a *Gardeners' Chronicle* Almanac with our first issue in the New Year. In order to make it as useful as possible for reference, we shall be obliged if Secretaries of Horticultural, Botanical and allied Societies, or any of our correspondents, will send us immediate intimation of all fixtures for 1898.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held on Monday, January 10, 1898, when the adjourned discussion on the paper read by Mr. F. PUNCHARD (Fellow) at the last meeting, entitled "The Royal Commissioners' Suggested Amendments to the Agricultural Holdings Act, 1883," will be resumed. The chair will be taken at 8 o'clock.

CROSS-BREEDING IN CEREALS.—We have from time to time commented on this subject, and have now to call attention to the experiments of Messrs. GARTON, as commented on in the *Cable* for Dec. 4. We first saw illustrations of their crosses at the opening of the Winchelsea House establishment, and were much struck with the advances made, though it must be admitted there were strong men before Agamemnon, and that cross-breeding in Cereals is not altogether a new subject, and can hardly be spoken of, as it is by our contemporary, as a "discovery." The Government were solicited to lend assistance, but they did not see their way to this, as there was no precedent upon which to act in such a matter. In these circumstances, the Earl of WINCHELSEA set a portion of his Sleaford estate at the disposal of Messrs. GARTON in order that they may continue their experiments. The results obtained by horticulturists on the same lines afford ample guarantee for similar progress on the part of agriculturists. It is claimed for Messrs. GARTON that the grain, in the case of Wheat, has been increased in size 40 to 50 per cent.; the quantity of gluten has also been increased. In Oats, varieties have been produced which give four or five times more than the ordinary varieties.

MÖLLER'S DEUTSCHE GÄRTNER ZEITUNG is to appear as a weekly journal from January next.

MUSÉUM D'HISTOIRE NATURELLE.—We have received a catalogue of seeds and living plants offered to public establishments by the museum. Application should be made to the DIRECTOR, 57, Rue Cuvier, Paris.

HOW TO CATCH SLUGS AND SNAILS.—M. HENSON, in the *Revue de l'Horticulture Belge*, recommends that small pieces of wood smeared on the under-side with lard or grease, and laid about the beds, form excellent traps for these destructive molluscs.

THE LATE MR. BATEMAN.—Among the notices of the late distinguished Orchidist (most of which we observe have been taken without acknowledgment, directly or indirectly, from our own columns), not one has alluded to the vigorous way in which he attacked a swindler, who paraded in the most audacious manner his wonderful novelties. Mr. BATEMAN'S "Museum Hullettium," in our volume for 1867, was a source of amusement to all but the dupes, and they were many, and of high degree; and, no doubt, it led to the removal of the culprit into a locality where it was impossible to grow the Münchhausen-like wonders, and equally impossible to proclaim their wondrous attributes.

SALE OF CYPRIPEDIUM BEEKMANNI (see p. 434).—To this plant an Award of Merit was granted, and a higher award would have been made had there not been a doubt expressed by some members of the Committee as to its exact parentage. The price for which the plant sold was 4000 not 400 francs. Our information came from a Belgian correspondent, and was not checked with our own previous report.

DUTCH HORTICULTURAL AND BOTANICAL SOCIETY.—At the meeting of this Society, held on November 27, 1897, at Amsterdam, the committee awarded First-class Certificates to Messrs. A. P. BOUWMAN & SONS of Arnhem, for Chrysanthemum Belle des Gordes, and for C. Milla. Léocadie Gentils; to Mr. W. VAN Veen of Leiden, for Chrysanthemum Lady Esther Smith, C. Mrs. J. Lewis, and C. Madame Gustave Henry. Certificates of Merit were granted at the meeting of October 9, 1897, to Mr. J. VAN HOUTEN of Hilversum, for a white sport from Chrysanthemum C. Harman Payne; and to Mr. A. G. M. RICHARD, of Naarden, for Yucca filamentosa bicolor. H. C. Zwart, Secretary.

NOTTINGHAM AND NOTTINGHAMSHIRE CHRYSANTHEMUM SOCIETY.—The members of the above society held their annual dinner at the Adjutant White Hotel, Hunger Hill Road, on Friday evening, 17th inst., to which about fifty sat down, Mr. D. WHITTINGHAM (president) presiding.

THE WEATHER-PLANT.—We have received various letters on this subject, which has again cropped up in the daily papers. There seems, indeed, to be no limit to human credulity, and the high and mighty seem equally liable to these infirmities as the poor and simple. Many of us, moreover, are troubled with short memories, else it would be remembered that, in compliance with the wishes of the PRINCE OF WALES experiments and observations were made at Kew by Professor FRANCIS OLIVER, the details of which are given in the *Kew Bulletin* for January, 1890, No. 37. We do not want to waste space by repeating the details of Professor OLIVER'S careful comparison of Mr. NOWACK'S forecasts with the actual results. In many cases, the "forecast" was made out after the event! A circular now before us gives a copy of the letter of introduction from the PRINCE OF WALES to the Director of Kew, but it entirely omits reference to the trials made at Kew to which we have above alluded.

CHRYSANTHEMUM CULTURE.—One great objection to the culture of Chrysanthemums, at least for exhibition purposes, is the length of time and the amount of attention they require to bring them to perfection—indeed, there is no end to it. Hardly have the flowers been removed than it is time to think of taking cuttings and starting afresh. Hence, there is much interest to Chrysanthemum growers in considering the method of culture followed by Mr. LYNE, as described in a recent number of our energetic contemporary, the *Gardeners' Magazine*. The method is briefly this:—After the flowering period is over, the plants are placed in a cold-house, or under the shelter of a wall. The pots are sunk, and arrangements made for protecting the plants in case of need. In the spring the plants are removed to a

warmer and lighter situation, where they speedily form compact and robust offshoots. These offshoots are taken off, and the cuttings placed in frames towards the end of May. In about ten days the cuttings will be rooted, and should then be gradually exposed to the air, repotted into thumb-pots, and ultimately into 48's or 32's, where they will flower at the usual time. In spite of the shortness of the time, the size and quality of the flowers are by no means impaired. A French journal claims precedence for M. CHOLET, of Lyons, which is only another proof of the value of the method for certain purposes, for had it not been a good one, our neighbours would not have been in a hurry to claim priority. The subject was discussed at the Chrysanthemum Congress held at Bourges in November, 1896, a report of which will be found in the journal of the French Society of Chrysanthemists, *Le Chrysanthème*. In that journal M. CALVAT, speaking of M. CHOLET's procedures, recommends it in cases where it is desired to have short compact plants for market-work, or the decoration of apartments. After all, there is nothing very novel in spring-struck cuttings, and where plants are hardy enough to withstand the winter, the advantage of striking the cuttings in spring, when risk from frost is over, and they will have all the benefit of increasing light and heat, is obvious.

"FLORA CAPENSIS."—It is not long since we had the pleasure to announce the recommencement of this valuable work, of which three volumes were published by HARVEY & SONDER. The work remained in abeyance till recently, when it was resumed, and botanists and horticulturists were enabled for the first time to get a collected account of the Cape bulbs, Aloes, and other Monocotyledons in which they are so much interested. The part now before us contains, among other Orders, the Comelynas and part of the Cyperaceae, by Mr. C. B. CLARKE; the Juncaceae, by Mr. BAKER; the Restiaceae, by Dr. MASTERS; and various smaller Orders by Mr. N. E. BROWN, Mr. ARTHUR BENNETT, and Mr. C. H. WRIGHT.

MARKET GARDENS AND FRUIT GARDENS.—From official records we learn that the area allotted to the culture of small fruit in Great Britain in 1896 was as follows:—

Orchards	...	...	32,000 acres
Market gardens	...	...	30,699 "
Elsewhere	...	...	13,456 "
Total			76,245 "

The acreage devoted to market gardens in Great Britain was 96,696 acres. The total acreage of orchards was 215,642. In each case there was an increase over the preceding year.

THE PUBLIC GARDENS AND PLANTATIONS OF JAMAICA.—The November issue of the *Botanical Gazette* (Chicago) contains a full account of the history of the Botanic Gardens of the island, by Mr. W. FAWCETT, the director. Jamaica affords an excellent illustration of what may be done by the practical application of botanical science to avert the ruin consequent on the failure (from fiscal reasons) of one crop.

HYBRID FERN.—Prof. J. B. FARMER, in the last part of the *Annals of Botany*, describes the peculiarities of a hybrid Fern raised many years ago in Messrs. VERRILL's nurseries by Mr. SCHNIDER. The parents were *P. aureum* and a variety of *P. vulgare* known as *elegantissimum*, which occurs naturally in Cornwall, and shows some tendency to revert to the common type. The spores from the Cornish variety were sown, and when the prothallia were developed they were planted inter-mixed with prothallia derived from *P. aureum*. The two sets of prothallia could not be sown together as the rate of growth of *P. aureum* is much more rapid than in the case of *P. vulgare*. Mr. SCHNIDER has repeatedly raised this hybrid Fern, so that no doubts are entertained of its hybrid origin. Professor FARMER details the structural peculiarities of the two parent forms and of the intermediate plant, one of the most interesting of

which is the sterility of the spores. The structure gives an opportunity for a discussion of the theories of WEISMANN, into which we cannot follow him.

"THE WEEKLY FLORISTS' REVIEW."—We have received a copy of the first number of a new American paper, devoted principally to Trade interests. Every subscriber who shall, in addition to payment of his annual subscription, remit one dollar to the manager, will be entitled to receive the dividends on one-tenth of a share of the stock in the company formed to publish the paper. The shares are at par value, 10 dollars.

VICTORIA MEDAL OF HONOUR.—At a meeting of the Council of the Royal Horticultural Society, held on December 14, it was decided to issue a diploma to all the recipients of the Victoria Medal of Honour. It was also unanimously resolved:—"That in the event of any recipient violating the conditions on which the Victoria Medal of Honour was bestowed, by using it for advertising or for the promotion of trade interests in any other way, the name of such offender shall be struck off the list."

HORTICULTURAL CLUB.—The usual monthly dinner and *conversazione* was held on Tuesday evening, the 14th inst., and was one of the most successful that has taken place for some time. The chair was occupied by Mr. Harry J. Veitch, and there were present beside the Rev. W. Wilks, Messrs. Philip Crowley, M. H. de Vilmorin, R. Milligan Hogg, J. H. Veitch, Henry J. Pearson, C. E. Pearson, Geo. Bunyard, Geo. Monro, J. Asbee, James Walker, G. Gordon, J. Sweet, A. Watkins, Peter Kay, A. W. Sutton, A. F. Barron, Geo. Paul, H. Wright. Mr. M. J. Garcia was the guest of the Club for the evening, and gave a most interesting address on the "Development of the Foreign Fruit Trade, and its Bearing on British Fruit Culture." A very lively discussion followed, in which Messrs. Geo. Monro, J. Walker, G. Bunyard, and others took part. A cordial vote of thanks was awarded to Mr. Garcia, and was carried with acclamation.

SOCIETY OF JERSEY GARDENERS.—The eighth annual dinner of this Society took place on Thursday evening, the 16th inst., at the Royal Yacht Hotel, St. Helier, Jersey, the chair being taken by the retiring President, Mr. A. Luxon, the company mustering altogether about seventy. The occasion was seized upon to present the President, on the behalf of the members, with a valuable gold watch in recognition of his great services during his period of office. The presentation was made by the Constable of St. Helier (Mr. H. E. LE V. DIT DURELL). The new President of the Society is Mr. ASHFORD, Queen's Road, Jersey.

EXCHANGE OF SPECIMENS.—Mr. C. K. DODGE, of Port Huron, Michigan, U.S.A., is desirous of exchanging dried specimens of plants with British or Irish botanists. The specimens are good, well-named, and the number of duplicates available for exchange is about 10,000. They are mostly from the vicinity of Lake Huron, near the Canadian frontier (province of Ontario).

NARCISSUS IN SCILLY.—Our two illustrations in the present issue almost explain themselves. The one, a field of the bulb farmer in a small way, with its rows of Narcissus in full bloom; and the young man with the basketful of cut blooms (see fig. 131, p. 443); and then the shed, with perhaps a glass roof, in which lads and lasses are busily engaged in sorting and bunching the blooms, cut probably the day before in a scarcely opened condition, but which have been expanded sufficiently for market purposes in a warm-shed or glasshouse (see fig. 130, p. 442). When packed in light wooden boxes holding a dozen or two dozen bunches, and addressed to dealers and salesmen in London and the leading cities of the country, they are ready for stowing on board the small steamer which makes the passage from Penzance four times a

week, beginning with a cut. or two, and reaching 30 tons. The weight of Narcissus flowers alone reached, in the present year, 500 tons. The trade in Narcissus seems to extend every year, so much do the beauty of colouring and gracefulness, and fragrance of some of the varieties, appeal to persons of all classes. The narrative of the introduction of the cultivation of these bulbs to the poverty-stricken islanders, by Mr. DORRIEN SMITH, less than a score of years ago, is known to most of our readers, so that recapitulation is unnecessary. In Scilly, we may remark, there is no winter and no summer, and it may be said that it is all spring or autumn weather; neither scorching heat nor biting frost. From November to May or June is the rainy season, and after June dry weather sets in. Plants from Japan, New Zealand, and Australia too tender to withstand the climate of the mainland, excepting in parts of Devon, Cornwall, and South-west Scotland, thrive here without protection, unless it be of an arboreal kind to preserve them from the furious winds from the Atlantic; as witness the fine specimens of *Dracena australis* on the outskirts of the bulb-field (fig. 131). The bulbs remain in the beds from two to six years, according as the variety propagates itself fast or slowly. During this period of time they receive annually, after the weeds and tops are mown off, a dressing of sea-weed, the easiest obtainable manure, and one exactly suitable to the needs and idiosyncrasies of the bulbs which are injured by contact with strong manures. On the better class of soils the handsome large-flowered varieties are cultivated; and on poorer soils, the Tazettas, Scilly White, Soleil d'Or, and Grand Monarque. Owing to this moderate manuring all the better-class varieties, which, in Holland, owing to the high feeding practised there, are fast dying out, in Scilly remain perfectly healthy.

PUBLICATIONS RECEIVED.—The "Gloucester" *Dirry and Directors' Calendar* for 1898. (Gloucester Railway Carriage & Wagon Co.) A useful and handy little volume, with directory for Gloucester visitors, general information, and ample space for daily notes. — *Cassell's Magazine*. The Christmas number is full, as usual, of letter-press of a seasonable character, plentifully interspersed with pictures, large and small. — *Nova Scotia Provincial Government Crop Reports*. The fruit crops are reported as far below the average; and as our own crops are also below the average, prices are likely to rule high. — *Forcing Tomatos*. New York Experiment Station. — *Westnik*. St. Petersburg. — *Les Phyllomes Hypopeltes*, par C. de Candolle. — *Jardin des Plantes de Montpellier*. Catalogue des graines recollées en 1897. — *Le Parc Public de l'Ezbekikh*, par G. Delchevalerie. — *Live Stock Journal Almanac*. — *Contributions from the Botanical Laboratory of the University of Pennsylvania*. — *Jaloo*. A lecture by Colonel Halford Thompson. — *The Plant World*. Nos. 1 and 2, edited by Dr. F. H. Knoulton. (Willard, Clute & Co., Binghampton.) — *The Weekly Florists' Review*. Chicago. — *The Australian Kitchen Garden*. (G Robertson, Melbourne, &c.) — *The Garden Annual* (37, Southampton Street, London) is in too general use to need recommendation.

PLANT PORTRAITS.

ACACIA CELASTROFOLIA, *Bull. Soc. Toscana di Ottic.*, t. XI. 1897.

ASOLEPIAS CORNUTI, *Mechans' Monthly*, December.

CARNATIONS, border varieties: 1, George Maquay, white; 2, Ariel, rose-coloured; 3, Rosmaron, crimson. *Garden*, November 20.

CHRYSANTHEMUM AFSNÉ, *Revue de l'Horticulture Belge*, December.

NYMPHÆA MARLIACEA ALBIDA and N. ROBINSONI, *Garden*, December 4.

PLUM, REINE CLAUDE VIOLETTE, *Bulletin d'Arboriculture, &c.*, November.

ROSA MACRANTHA, *Garden*, December 11.

ROSE, MADAME ABEL CHATENAY, *Le Moniteur d'Horticulture*, December 10.

ROSE, PAUL'S SINGLE SCARLET, *Garden*, December 11.

STRAWBERRY, PERPETUAL ST. JOSEPH, *Revue Horticole*, December 16.

HOME CORRESPONDENCE.

DUCHESS D'ANGOULÊME PEAR UPON A WALL.

—The remarkable experience given in your issue of Dec. 11 last concerning the above Pear as grown upon a wall seems to indicate that there is no complete connection between the treatment described and the splendid results obtained. If a tree is wanting in fruitfulness through sappy growth, root-pruning is advisable. The diminished growth of the following season, converted into fruit-spurs, will in the second year following the operation probably result in a crop. It would be interesting to know what kind of soil the tree was growing upon, also when it was planted in its present station, whether grafted on Quince or Pear, and what crops it has produced hitherto. Did it actually fail in fruitfulness owing to sappy growth? The question occurs whether root-pruning was done earlier than usual, which is after the end of October. Was it done in September, and the results accomplished within one year instead of two? But the application of lime may have produced the result if the soil was wanting in that constituent, as it would set free plant-food in the organic matter by assisting its decomposition. It might have the effect of sweetening the fruits themselves in the same way as applications of lime to meadows will cause destruction of harsh bitter grasses, and assist the growth of more nourishing and sweeter kinds. The particular variety of Pear is hardly one of merit as grown in this country, and in good fruit-shows it is usually conspicuous by its absence, or very moderately represented compared to other varieties, or to the splendid examples sent us annually from France. The crop described is thus even more remarkable, and also in contrast to the statement in the catalogues of the well-known Sawbridgeworth firm to the effect that this variety is usually insipid from a wall. The South Wales sea-coast, where the reported success occurred, doubtless resembles more the condition of France than this part of the kingdom. *H. H. R., Forest Hill.*

—My gardener has invited my attention to your interesting article on the Duchesse d'Angoulême Pear, which appeared in your issue of the 11th inst., by which it seems that the heaviest Pear of this variety, of which you have a note, weighed 1 lb. 10 oz. It will probably interest your readers to know that I gathered a Pear from a tree in my garden here—supplied by Messrs. Turner, and grown in my garden opposite their nursery—which weighed 1½ lb., although a small portion had been picked out by the birds. It was exhibited in a fruiterer's shop window here, and on November 6, 1895, when fully ripe, I had it weighed again and photographed, and found that it had lost 1½ oz., and then weighed 1 lb. 10½ oz. This fact of loss of weight in ripening may interest some of your readers. At the same time, on another of the trees of the same variety, viz., Williams' Duchesse d'Angoulême (or Pitmaston Duchess, as I believe it is also called), I had amongst several dozen Pears one fine group on one stem containing six fine Pears, touching each other, and weighing about 1 lb. each. I consider it one of the most handsome and luscious Pears grown. *R. H. Barrett, Slough.*

NATIONAL DAHLIA SOCIETY'S EXHIBITION.

As I am responsible for the erroneous statement, which appears on p. 439 of your last issue, that only "2,300 blooms" were staged at the last exhibition of the National Dahlia Society, allow me to explain how the error arose, and to give the correct number of flowers set up on that occasion. The above figures would be accurate enough but for the fact, which I omitted to take into account at the time, that in all but the classes set apart for Shows and Fancies the varieties are required to be staged in bunches. The correct totals for each section are as follows:—Shows and Fancies taken together, 1,530 blooms, Pompons 2,148, Cactus 1,926, singles 1,164, making a grand total of 6,768 blooms. This estimate does not include the many new Cactus Dahlias submitted for certificates, which were shown in bottles, or the large number of flowers used in the decorative arrangements set up in the commemoration class. Neither does it include the blooms in any of the non-competitive exhibits. I may here state that the exhibition was the largest ever held by the society. The shows and fancies taken together were more numerous than at any similar show for nine years, the Pompons than at any show since 1892, while the Cactus Dahlias were staged in greater numbers than at any preceding

National Dahlia Society's exhibition. *Edward Mawley, Berkhamsted.*

PRUNING APPLE AND PEAR TREES.—In the Hardy Fruit Calendar, p. 415, Mr. Ward gave directions how to prune Apples and Pears, and said "better let them go unpruned than trust an unskilful man with the pruning." He will pardon a small grower if I assert that a great many trees would be far more shapely and fruitful if they were not pruned at all during the first half-dozen years of growth, and after that time I am sure they will need but little. He further says: in the formation of large fruit-bearing trees, of whatever kind, in as short a time as possible, the young leading shoots should be pruned back from 5 to 9 inches, and each will produce three to five growths next season. Now if you have "cut back" either standards or bushes they will have at least nine to twelve growths, and if they are pruned back to 5 or 9 inches, and make three to five more growths, you will get from twenty-seven to sixty branches, within 5 to 9 inches of main stem, which in my humble opinion is far too many. I grant that the badly placed ones can be taken off, but the writer does not advise this, but to cut back to within 2 inches of last year's wood, which would cause still further growths and necessitate still more pruning. A standard-tree with six to eight growths to the main stem is in my opinion well provided, and though they may not appear many at the time, they will prove sufficient before twenty years have passed; and if these be left 18 to 24 inches long, instead of 5 to 9 inches, the sooner will you get a large tree, and fructification combined with a shapely specimen than is possible with so much pruning. I have yet to see a deciduous tree made shapely and fruitful by severe pruning. An Apple tree will make a handsome and fruitful specimen without the use of the knife at all. Even in this exposed place, the Blenheim Orange has fruited on an unpruned tree in the third year from budding; and a fan-shaped trained tree, five years old, has not shown a bloom. This year, Golden spire, only budded three years last June, produced a half-sieve of very fine fruits; the same tree last year yielded thirteen large fruits; while from five trees, but three years old, were taken 3½ sieves, which sold at half-a-crown per half-sieve. I also take exception to the pruning of laterals or growths other than leading ones back to "2 inches," as Mr. Ward advises. Two inches may be very well for trees whose growths are thin and spreading, such as Red Quarrenden, Adams' Pearmain, &c., but for rigid ones, as Blenheim, Betty Geeson, Dutch Codlin, Northern Greening, and Tower of Glamis, which are erect until fruit weighs them down, two inches would be too close to prune and expect fruit-buds to form as a result of the operation, unless the roots were curtailed at the same time—an operation entirely unnecessary so long as the tree has room to extend its branches. This is an old subject, but none the less an important one. *Jas. Kettle, Corfe Mullen, Wimborne.*

STANDARD ROSES.—In your issue for the 4th inst. there was a copy of an advertisement that reflected little credit on the paper it was taken from or upon the advertiser. I know of a man who in the spring advertises large bushy Fuchsias, 1s. 6d. per dozen, and these superior plants are sent to the purchaser in an ordinary night-light box. Annoying as such advertisements are to members of the trade who do not deal in rubbish, they are much less aggravating than the absurd recommendations of certain amateur gardening papers. An authority (?) advises as the very best standard Roses for a semi-circle facing windows the following mixture:—Persian Yellow, Marie Van Houtte, Chénédolle, Harrisoni, Madame A. Carrière, Celestial, Annie Alexieff, White Provence, Jules Margottin, Mdle. Nachury, Prefect Limbourg, Madame Perney, and Madame G. Luizet. Does the writer know a standard Rose when he sees it? *H. McDonald.*

ROSE CLOTH OF GOLD.—I can endorse all that your able writer "Wild Rose" says on p. 420 of the *Gardeners' Chronicle* for December 11, 1897, regarding the above Rose. In the summer of 1880, I was gardener at The Rectory, Farthinghoe, Northamptonshire, and on the gable-end of the house there was a large plant of this variety, some 80 or more feet in height. It had evidently been there many years, and the stem was large, and looked old. The aspect was south-west, and the soil a strong yellow loam. The blooms were so fine that I thought it the finest yellow Rose I had ever seen. I had not seen Rose

Cloth of Gold before, nor has it been my pleasure to see one since. *F. Southam, The Oaklands, Kenilworth Road, Leamington Spa.*

BULB AND POTATO-BOXES.—The box described by Mr. Burbridge on p. 422, seems to be the same as are the boxes I have had in use in Surrey for storing seed-Potatoes for the past three years. From a simple home-made pattern I gave to our county council carpenter, some 100 or more were made for my use; and whilst very strong, yet the entire cost for wood and labour was but about 6d. each. I should think these boxes, being strongly made, would last for twelve years at least. The ends are of ½-inch boards, 5 inches deep, and 13 inches long. The sides open an inch deep both top and bottom, are made of strips 3 inches deep of ½-inch board, and the bottoms are of the same material. The whole measurements are 15 inches long, and 13 inches wide; each box will comfortably hold 14 lb. of seed-tubers. There is a handle running along the centre on the top, a strip of wood one inch by five-eighths of an inch let into either end evenly. The raw edges of the handles are pared down, making them comfortable to handle. By having the sides partly open, should necessity compel the stacking of the boxes one on the other, air can, all the same, freely circulate amongst the tubers. As a dozen of these boxes may be stood one on the top of each other in case of need, or in hard weather, 12 pecks, or 3 bushels, of seed-tubers may be stored in a space such as is required for an ordinary chair. The boxes can be carried to the planting-ground and used as baskets most conveniently. I find it an excellent plan to write the name of the variety of Potato in the box on a small card, and tack it to the box. There is a small illustration of this simple and cheap Potato-box in my *Primer on Vegetable Culture*, published by Macmillan & Co. A. D.

A HALL FOR HORTICULTURE.—Mr. Cannell's letter on p. 436 of the *Gardeners' Chronicle* is the best that has appeared on this subject for a long time past, and there is a business ring about it. Cannot this subject be brought to a successful issue this time? It is a disgrace to horticulture in general—and especially so to London horticulture—that no better accommodation exists there for holding flower shows and meetings than the Drill Hall, James Street; surely the horticultural trade in and around London might sink all petty differences and unite for once on a subject like this and make the success of the venture certain. The trade especially, would reap very great advantages by having a suitable building, and it would only be fair that they should all assist with money as far as they are able to do so; and the advantages accruing to the various horticultural societies would likewise be inestimable. It is preposterous to say, as some have done lately, that the National Chrysanthemum Society could not succeed apart from its Music Hall associations. The Chrysanthemum has developed of late years into the most powerful attraction that we possess among flowers, and many persons travel long distances to see the National Show, and return home utterly disgusted with the disagreeable associations of the place it is held in, and of the difficulty experienced in an inspection of the exhibits. The fact that a comparatively young society like the Edinburgh can pay its expenses and give away £250 to charitable institutions, ought to set any doubts on this point at rest. It was a treat to visit such a show as this, at the Waverley Market, all the exhibits were displayed advantageously; and plenty of space allowed for the visitors to promenade round the tables and inspect the flowers and plants. Moreover, exhibitors were able to unload close to the tables on which the exhibits were displayed. The building was well lighted by electricity, the air was clear, the music discoursed by the band of the Grenadier Guards was of the best. Under such circumstances the pleasure of seeing the exhibits, and the beauty of the flowers is increased! and the visitors will have determined on attending the show another season. *W. H. Diers, Belvoir Castle Gardens, Grantham.*

—Mr. Henry Cannell, in writing to the *Gard. Chron.*, always means well, and I am in hearty sympathy with him in his desire to provide a home for horticulture, even if only large enough for routine business purposes. But a very important question is opened up when the proposal embraces space for the exhibitions of the special floricultural societies he names. I am afraid that Mr. Cannell and others who write in a similar strain, are utterly at sea as to the space required for the exhibitions of the National

Rose and National Dahlia Societies, which are much smaller than those of the National Chrysanthemum Society. There is no difficulty in finding ample space for the exhibitions of the other and smaller societies. I assisted in the arrangements of the first National Rose Show and the first National Dahlia Show, held in St. James' Hall, Regent Street, in 1858. The report of the former, written by the Rev. H. H. D'Ombra, which appeared in *The Florist* for August, 1858 stated, "We had heard much of the Hall itself, but as true florists let us confess we never bestowed a thought even upon it until the flowers had been thoroughly scanned, and then when we did look at it, we were disappointed. It was much smaller than we had imagined, and much too small for the purpose for which it was used on that day." It was

well a few figures be quoted. At the exhibition held at the Royal Aquarium on November 9, 10, 11, about 4,000 superficial feet of tabling was required to stage the exhibits, nearly three times the available space in the Drill Hall, James Street; and in addition about 2,000 feet of ground space was occupied; and this in association with broad gangways, and free access to all exits. Those who so freely criticise the breaking up of the display on the ground floor of the Aquarium, will now see that it is done largely in the interests of the public safety. Mr. Cannell's remarks about the disappointing amount of money the directors of the Royal Aquarium offer to the National Chrysanthemum Society are probably based upon some misleading figures recently given in the *Journal of Horticulture*.

over the average attendance which goes to make up a return for the outlay upon each of these three shows. *Richard Dean, Ealing, W.*

SUNSHINE.—The summer months of the Jubilee year were ever so much sunnier than the same months of any year during which sunshine has been registered. At Bradford we have not a fair share of sunshine, but such as we have is indicative of what occurs in other parts of the kingdom. The summer months include May, June, July, and August. During these months in 1887 we had 615 hours of bright sunshine, in 1897 we had 780 hours, whereas in 1896—nearly an average year—we had only 397 hours. The consequence of sunshine, I am persuaded, is very inadequately estimated. However, of one thing I am sure: the sunshine of last summer's months would feed up what without it would have been leaf-buds into blossom-buds. Therefore, as one consequence of the sunshine, next spring the trees and hedge-rows will be covered with bloom, and if the summer following be suitable, there will be plenty of berries for the birds in the winter of 1898-9, whether it be a hard winter or not. *John Clayton, December 18, 1897.*

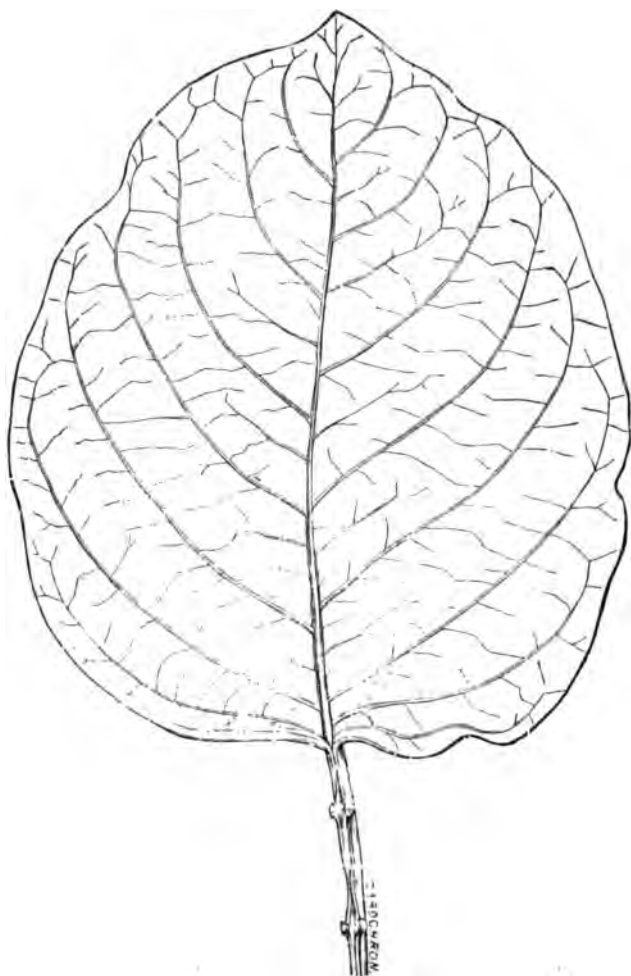


FIG. 133.—LEAF OF PASSIFLORA ALATA.

PASSIFLORA ALATA.

I NOTICED in your report of the Royal Horticultural Society's show at the Crystal Palace, held on September 30 and two following days, that Mr. W. Tidy, gr. to W. K. D'Arcy, Esq., Stanmore Hall, included a dish of fruits of *Passiflora edulis* in the collection he exhibited on that occasion. As for many years the plant under the name at the head of this note has been grown and fruited at Bystock, I have wondered whether the *P. edulis* of Mr. Tidy and the *P. alata* are the same thing under different names. [They should be quite different. Ed.] Of the beauty and lusciousness of the *P. edulis* in question I can give no opinion, as I have not seen or tasted the identical fruit; but of *P. alata*, as grown here, I can speak in the highest terms. You have already figured a fruit in a number of the *Gardeners' Chronicle* for 1894 (fig. 135), whilst a reference to the plant and fruits appear in the number for Oct. 28, 1893, under the name of *P. quadrangularis*, which was that by which it was for a long time designated at Bystock.

I am pleased once again to call attention to this most excellent addition to the dessert-table, as well as to one of the most ornamental stove-climbers. At Bystock several fine plants are now planted out, two being in a fruiting Pine-stove, where they cover the roof-space over the path, and which this season produced over 200 fine fruits. The plants were out back early in the new year, when new growth quickly formed, and was fastened to the wires overhead. The growth is very rapid, and a fine show of flowers produced. Each bloom (fig. 134) was fertilised with a soft camel-hair brush, and the greater number set, and soon began to swell.

In midsummer the first fruit ripens, but growth still continues, and soon another large show of blooms appears; these are again fertilised, and the latter quantity of fruit usually exceeds, in large numbers, the first ripe ones. The plant was also grown in the Banana-houses, and here, too, we got fruit of superior size, but perhaps the number was not quite so great. This I attribute to the greater moisture of the Banana-houses, as many blooms fail to set, and soon drop off; but the Pine-stove, being naturally drier, the number of fruits failing to set and swell are comparatively few. This fruit was much esteemed, and I certainly think if it were better known, and the simple treatment given that it requires, it would be much more often met with, and would be found to be a very useful addition to the dessert. I may say, we have also the true *P. quadrangularis*, which I find less vigorous in growth, smaller in fruit, the colour of which is somewhat purple, while that of *P. alata* is of a tawny green. *W. Swan.* [Some fruits sent to us were made into a conserve of delicious flavour, richer, as far as we remember, than that of *P. quadrangularis* or *P. macrocarpa*, which are most undeservedly neglected. *P. edulis* is deliciously fragrant, but there is nothing to eat in it! Ed.]

so with the National Dahlia Show two months later: there was not nearly room enough to display the flowers to the best advantage. The very same disregard to the capacities of buildings confessed to above characterises many of the statements made by latter-day writers. I imagine the show of the National Rose Society in 1898 will be considerably larger than that held forty years before, and Mr. Cannell may learn from the foregoing something of the required size of a horticultural hall. Let it be remembered that in 1858 there was no London County Council taking precautions in the interests of the public safety, requiring to have deposited with them ground-plans showing commodious gangways, and clear passages to all exits. But the shows of the National Chrysanthemum Society! So many wild, speculative statements are made by, unreflecting writers as to the housing of these shows that it is

It is not necessary to go fully into such matters in this relation, so I content myself with the statement that the National Chrysanthemum Society is not called upon to expend anything upon tabling, staging, baize, &c., nor on advertising, with the exception of the leading gardening papers, nor on bill-printing or posting, nor on labour, except what is required during the show days; nor on lighting, cleaning up, or rent; nor have they to undergo expense on account of other items known only to those in close touch with flower shows; whilst music and entertainments are also provided free of charge. [! Ed.] If the National Chrysanthemum Society had to bear these expenses, and they could be totalled up into a lump sum, the amount would astonish. I have good reason to believe that the exhibitions held in September, October, and December bring but little to the exchequer of the Aquarium, it is only the increase

ORCHIDS, THEIR COLLECTING AND CULTURE.

(Paper read by John E. Lager, Summit, N.J., before New York Gardeners' Society, October 2, 1897.)

THE number of these plants has been greatly diminished the last few years, great quantities having been torn from their native homes and sent to various countries, but what has done more in South America to reduce their numbers, is the continually increasing plantations. Great zones of forests have been cut down lately, and extensive Coffee-plantations have taken their places. The *Cattleya* region has suffered the most, it being the right elevation and temperature for the Coffee-tree; but other Orchids have felt the change as well, such as the most useful *Odontoglossa*, &c.

Guided by the success I had on my first trip a few years ago, I last year made for the same old place, there only to find, not Orchids, but the forests gone, and Coffee-trees planted by the thousands. Orchid collecting being my sole object, I was greatly disappointed, but there was only one remedy, and that was to push further into uncivilised parts far from habitations; and I must say, I was fortunately rewarded by finding a most beautiful lot of *Cattleyas*, that, to judge by their appearance, had up to that date escaped the greed of the Orchid-hunter.

The South American Andes, as compared to other parts of the world, are, without the least doubt, the richest in useful species, as long as we keep to the Andes proper, which are marvellous in the number of species they contain. At almost every foot ascended from the foothills, new features of the vegetation are presented, one locality varying greatly from another. This variation ceases immediately at the foothills, below which extensive valleys and river-basins take the place of the rugged Cordilleras. The vegetation at these lower levels becomes at once more uniform, and plants found in the Magdalena and Cauca valleys of Colombia will, to the surprise of the traveller, appear repeatedly all through the Orinoco and Amazon valleys also. Some Orchids are also very erratic as to their abodes; *Miltonia vexillaria* appears in the State of Antioquia, Colombia, and then travels along the central Cordillera, a plant here and there, until all of a sudden we find it re-established in Ecuador and Peru. *Cattleya superba* is another appearing in spots in Colombia, Venezuela, and Brazil, and especially in the immense territories and low virgin forests embraced between the Orinoco, the Amazon, and Rio Negro systems.

Few people here imagine, when seeing beautiful Orchids in flower, how much trouble, work, and hardship have to be endured in securing them. Inconveniences of all descriptions are experienced at once upon setting foot on South American soil. [The illustration (fig. 132) shows that similar difficulties occur in the other hemisphere.] Here begins a series of the slow tedious transportations peculiar to these countries, ascending rivers sometimes by steamers, then by canoes, and traversing great stretches of land on mule and horseback, involving a lot of time and much expense before the longed-for Orchid region is reached. Yet there is always a certain charm attached to this mode of travelling. I enjoyed nothing more than to traverse one of the chains of the Cordilleras, starting out at three or four o'clock in early morning in the bright moonlight in order to avoid the heat of the valleys. Before the summit is reached the journey is hard, tiresome, and monotonous, and on roads and trails used by the Indians before the Spaniards, and which the latter used for three centuries without improvements or alteration. Leaving the tropical heat below, little by little the air gradually changes, becomes fresh and pure, and the rich aroma which the varied vegetation exhales is rapidly inhaled by the lungs in delicious draughts. At last the summit is reached; the road is less hard for man and beast, and finally a most beautiful and varied panorama is offered to our view of immense extensions of mountains rising one above the other, and in all possible shapes and angles, with deep declivities, narrow valleys, and roaring rivers. This beautiful scenery, recompenses the traveller for

the monotonous and tiresome ascent, and stimulates him on towards new expected triumphs in his explorations.

Many persons imagine Orchid gathering is an easy task, and they generally think that the plants grow on the trees by the ton, and consequently it is the easiest thing in the world to pull them off, put them in cases, and ship them home. On paper, and from a point of imagination, this is all very fine; but in reality such persons would find themselves greatly disappointed. To begin with, these plants never occur in quantities, even where most plentiful—only a few to a tree; while the greater part of the trees have none at all on them.

Material for packing-cases is another serious item to obtain—so serious, indeed, that often it is worse than getting the plants. Dry-goods boxes are often

many more, are principally what makes Orchid collecting both slow and expensive. Those huge snake and tiger stories of which, no doubt, you have heard, I have found in actual experience to be greatly exaggerated in connection with Orchid collecting. Some persons have asked me "Why don't you go down there and collect choice varieties only?" Yes, I should probably do so, were it only possible, but owing to the peculiar conditions of the country, it is utterly impracticable. Now and then a good thing is found, not always through the skill of the collector, but more through chance.

Supposing that *Cattleyas* are collected during their flowering season, owing to so many inconveniences, only a limited number of flowers is seen after they are gathered. A great number is torn off from the plants in felling the trees, and if a few are left, they

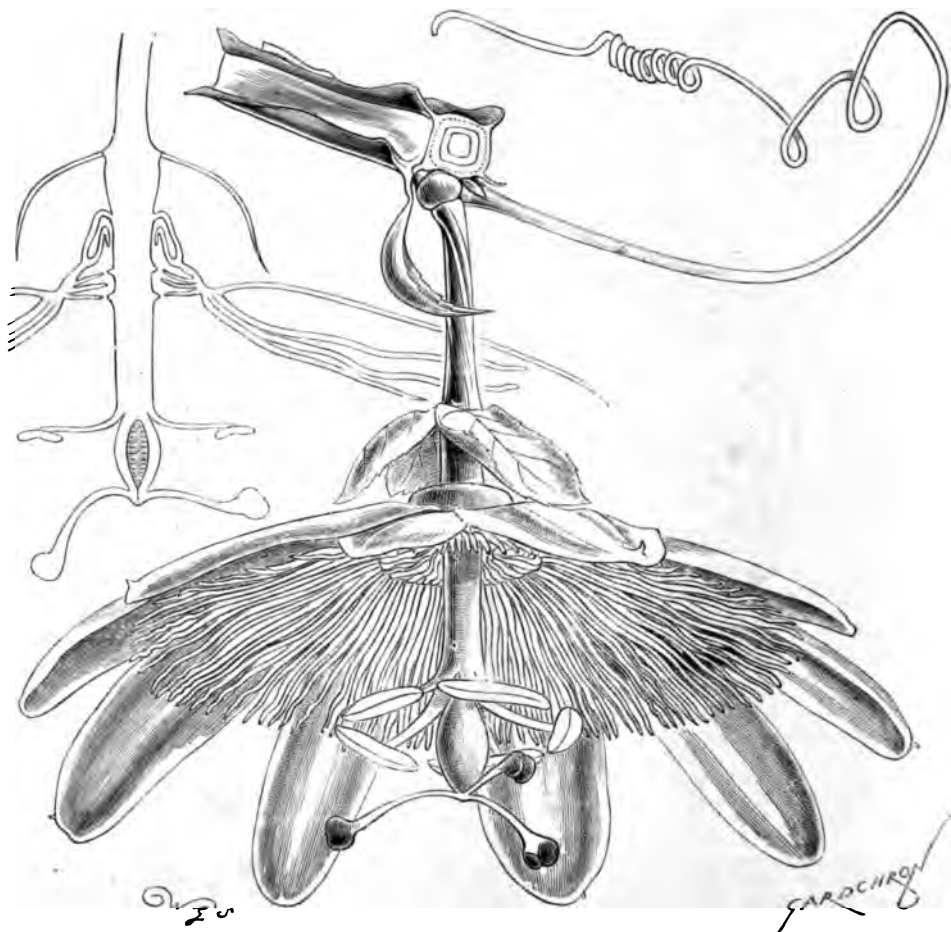


FIG. 134.—FLOWER OF PASSIFLORA ALATA. (SEE P. 449.)

bought long distances from the field of operations, taken apart, done up in bundles, and transported on mule-back to the place of packing. Sometimes this is impracticable, when other measures have to be resorted to, such as making crates out of Bamboo and stakes, &c. Frequently the plants have to be packed in bags, strapped on to the mules, and taken across narrow trails between rocks, stones and trees, wading rivers, &c., often to find the plants ground to pieces when the packing place is reached.

Another monstrous enemy will at times cross the collector's path in the shape of low water in the rivers. In this latter case he is left helpless until a freshet rushes down from the mountains. At the beginning of this year I came very near losing 100 cases of plants, already packed and piled up in tents on the river bank. For three long weeks I laid there impatiently waiting for a chance to move them. This, of course, is not the rule, but will happen when least expected. Difficulties of this nature, and

are liable to go also after carrying the plants in a bag for a few days. Then, in refusing plants out of flower, the men would soon refuse to collect, and without them the collector would have to leave the field without plants, probably a wiser man for the next trip.

Studying these plants in their native homes, the true conditions under which they grow, in order to derive some practical knowledge as to their culture, and lessen the sensational absurdities and mysteries in which this beautiful class of plants have been enshrouded until not very long back, we are gradually discovering the mysteries in their treatment, which, after all that has been said, written, and done, are only imaginary, and we can now note what a change has taken place the past few years in the cultivation of Orchids. The water-can, with its sometimes tepid water, has given way to the hose, and the clumsy blinds have been replaced by some simple form of white-wash. The material for potting or



FIG. 132.—ORCHID-COLLECTING IN SIAM.
(From a photograph sent from Bangkok by M. Roebelin.)

GARDENERS' CHRONICLE

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up is more sparingly used, and less labour is on its preparation. Air is admitted in larger ities, and the old system of closing up at a certain has outlived its usefulness. short, these

are now treated on a more common-sense These few things, simple as they may r at first sight, have been strong levers in g Orchids more popular in this country. *The ts' Exchange.*

THE NATIONAL AMATEUR GARDENERS' ASSOCIATION.

DECEMBER 16.—The annual dinner of this Association took place at the Holborn Restaurant on the above date, Mr. T. W. SANDERS, the President, occupying the chair, there being a large company, including many ladies.

In proposing "Success to the Association," the chairman stated that their Institution was a unique one, and it took charge of the interests of the *bond fide* amateur gardener, of which there were a large number about the country. He was proud to

MANCHESTER AND NORTH OF ENGLAND ORCHID.

DECEMBER 16.—The December meeting of the above Society was held in the Coal Exchange, Manchester, on the above date, the following members of the committee being present:—Messrs. W. Thompson, Chairman; G. Shorland-Ball, Vice-chairman; T. Statter, A. Warburton, J. Backhouse, G. W. Law-Schofield, H. Greenwood, D. B. Rappart, E. J. Sidebotham, R. Johnson, W. Stevens, H. Bolton, W. A. Gent (Hon. Sec.), J. Cypher, and P. Weathers. These meetings are evidently popular among the Orchidists, and no fewer than forty-two subjects were brought before the Committee.

Mr. H. WORTHINGTON, Abbey Lawn, Whalley Range, exhibited a very handsome form of *Laelia anceps* alba, reminding one much of the famous "Bull's alba," but with a more elongated lip (Award of Merit).

Mr. W. H. ALMOND, Alunscar, Blackburn, exhibited a very well grown plant of *Oncidium tigrinum* with a huge branched spike of blossom (Cultural Certificate).

Mr. J. CYPHER, Cheltenham, staged a variety of *Laelia tenebrosa* named *Thompsoni*, which had pale cinnamon sepals and petals, and pale rose-coloured labellum (Award of Merit); also a good form of *Cyp. Leeaanum giganteum* (Award of Merit).

Mr. W. THOMPSON, Walton Grange, Stone (gr., Mr. W. Stevens), staged a plant of *Laelia autumnalis* alba, of the purest white, with several flowers on the spike (Award of Merit); and a magnificent specimen of the beautiful *Laelia Gouldiana*, which is undoubtedly one of the finest in cultivation, having seven flower-spikes, all of which were well flowered. This was awarded a First-class Certificate and Cultural Certificate, a well deserved recognition.

Mr. H. BOLTON, Wilderspool, Warrington, exhibited a few interesting plants, amongst which was a very dark form of *Cattleya labiata autumnalis*, a very pretty form of *Odontoglossum Pescatorei*, well spotted with small violet markings, a very small form of *Cattleya Trianae* alba (the plant being weak), and an unusually late variety of *Cattleya Gaskelliana*.

Messrs. HUGH LOW & Co., Clapton, exhibited a superb form of *Cypripedium* \times *minos*, called *magnificum* (parents, *C. Spicerianum* \times *Arthurianum*).

Mr. J. LICHMANN, West Bank House, Hoaton-Mersey (gr., Mr. Edge), sent a few good things, including a well-flowered *Dendrobium superbiens*, *Cyp. Lathamianum*, a variety of *Cattleya labiata*, with lip very closely resembling *C. speciosissima*, a good form of *Cattleya Trianae* *delicata*, and an exceptionally good *C. Trianae*, "Fleur de Paradis," which obtained an Award of Merit. The same gentleman also exhibited *C. x Pitcherianum*.

Mr. G. SHORLAND-BALL, Wilmslow (gr., Mr. Hay), exhibited *Cypripedium insigne*, "Harefield Hall variety," a beautiful variety of exceptional size and substance (First-class Certificate); also a magnificent plant of *Cypripedium insigne* *Sandere* with three flowers (First-class Certificate); and *C. x Mrs. Maynard* (*nitens* \times *Leeaanum*), a distinct and useful plant (Award of Merit).

Mr. G. W. LAW-SCHOFIELD, Rawtenstall (gr., Mr. Schill), obtained an Award of Merit for *Cypripedium Leeaanum giganteum*; and a First-class Certificate for *C. x Cravenianum*, parentage not given, but possibly raised from *bellatulum* \times *Veitchi*, a very beautiful product, and gained a First-class Certificate.

Mr. O. O. WRIGLEY, Bury, exhibited *Cypripedium insigne*, "Uplands variety," which was almost identical with the "Harefield variety" (First-class Certificate). The same gentleman sent *C. Leeaanum perfectum* \times *C. Crossianum superbum*.

Mr. S. GRATRIX, Whalley Range, Manchester (gr., Mr. McLeod), exhibited *Cypripedium insigne* var. *Sanderianum*, a beautiful form, differing somewhat in shape from *Sandere*, and minus the few tiny spots which are peculiar to the latter variety (First-class Certificate). *C. Niobe* came from the same collection.

Mr. W. A. GENT, Brooklands, sent a form of *C. Lathamianum*.

Messrs. F. SANDER & Co. sent a few good things, *Odontoglossum cuspidatum* var. *magnificum* being a splendid variety to which an Award of Merit was given. *Laelio-Cattleya Gottleiana*, natural hybrid (*purpurata* \times *Warneri*) (Award of Merit). *O. crispum*, "Pink Beauty," a nice, well-formed flower suffused with a delicate blush (Award of Merit). The same firm sent the typical *O. Wattianum*.

Mr. H. GREENWOOD, Haslingden, staged a well-grown plant of *Laelia alba*, and that beautiful *Cypripedium* \times *Antigone* (*Lawenceanum* \times *niveum*); the flower was, however, somewhat small, or it possibly would have received the premier award (Award of Merit). *Dendrobium Kenneth* (*McCarthy* \times *Bensoniae*) came from the same collection.

Mr. E. J. SIDEBOTHAM, Bowden, showed a very beautiful and brilliant form of *Sophranitis grandiflora* (Award of Merit).

Mr. T. STATTER, Whitefield (gr., Mr. R. Johnson) exhibited *C. pripedium* \times *Statterianum*, a good thing with a richly coloured dorsal sepal (Award of Merit); *Cypripedium Leeaanum superbum* (Award of Merit); and a new albino form of *C. insigne*, very distinct, called "Johnsonianum" (Award of Merit).

Mr. E. BOSROCK, Tixall Lodge, Stafford, exhibited [a hybrid *Laelio-Cattleya*, and a pretty natural hybrid *Odontoglossum*. Mr. J. ROBSON, Altrincham, staged a pretty group of Orchids, amongst which were some good forms of *insigne* and various hybrid *Cypripediums* (Vote of Thanks).

Mr. R. OWEN, Northwich, also staged a group of the "mountain" forms of *C. insigne*, some really good things being amongst them (Vote of Thanks). P. W.



FIG. 135.—FRUIT OF PASSIFLORA ALATA. (SEE P. 449.)

SOCIETIES.

ANCIENT SOCIETY OF YORK FLORISTS.

MBER 15.—A company of between seventy and eighty men assembled at the annual dinner on the evening date, at the Bay Horse Hotel, Marygate, York, an Sir JOSEPH TERRY, J.P., President of the Society in the chair. The Society is in a flourishing condition, and consisted at the time of the late Chrysanthemum Show of 700 members, and since that date a considerable increase in the number of subscribers has taken

say that they had at the present time 600 members, of which number 100 had been added during the present year, while there were branches at Liverpool and elsewhere in a flourishing condition. He could honestly say there was an Institution to be proud of. He thought the Association could take credit to itself for the excellence of their quarterly Journal, of which their excellent Secretary, Mr. Leonard Brown, was the editor; and also in the fact that there was no Association in the country which could offer such advantages to their members as the National Amateur Gardeners' Association for such a small subscription as half-a-crown per annum. The toast was drunk with great enthusiasm; and during the evening various trophies, Challenge and other cups, Certificates, &c., were handed to their winners. Music and speeches carried on the proceedings until a late hour.



The term "accumulated temperature" indicates the aggregate amount, as well as the duration, of degrees of temperature above or below 42° Fahr. for the period named; and this combined result is expressed in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

DISTRICTS.	TEMPERATURE.				RAINFALL.		BRIGHT SUN.	
	ACCUMULATED.				Inch.	Ins.	Days.	Percentage of possible Duration for the Week.
	Above (+) or below (—) the Mean for the week ending December 18.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since January 3, 1897.				
0	3 +	12	26	+ 202	18	2	225	43.6
1	3 +	12	32	+ 41	5	1	197	28.5
2	5 +	27	13	+ 114	168	9	179	23.9
3	6 +	31	13	+ 143	128	0	168	22.6
4	6 +	33	12	+ 82	144	5	173	26.0
5	7 +	37	1	+ 270	213	4	162	25.7
6	5 +	26	8	+ 145	74	1	214	44.0
7	5 +	32	6	+ 266	128	3	193	36.0
8	7 +	41	0	+ 279	155	8	199	42.3
9	3 +	26	13	+ 87	19	0	226	38.9
10	3 +	35	8	+ 240	99	2	211	45.0
11	5 +	62	0	+ 426	91	3	211	35.0

The districts indicated by number in the first column are the following:—

- 0, Scotland, N. Principal Wheat-producing Districts—1, Scotland, E.; 2, England, N.E.; 3, England, E.; 4, Midland Counties; 5, England, including London, S. Principal Grazing, &c., Districts—6, Scotland, W.; 7, England, N.W.; 8, England, S.W.; 9, Ireland, N.; 10, Ireland, S.; * Channel Islands.

THE PAST WEEK.

The following summary record of the weather throughout the British Islands for the week ending December 18, is furnished from the Meteorological Office:—

"The weather continued unsettled and rainy during the greater part of the week, but towards the end it became quiet, foggy, and misty. The falls of rain were less heavy generally than those of the preceding week, but during the first day or two they were very considerable over the southern and south western parts of the Kingdom. Thunderstorms were experienced over all the southern counties of Ireland and England during the evening or night of the 14th.

"The temperature was rather low at the commencement of the period, but soon became very high for the time of year, so that the average for the week exceeded the normal by 3° in 'Scotland, N. and E.' and over Ireland, by 6° in 'England, E. and the Midland Counties,' and by 7° in 'England, S. and S.W.' Changes were, however, frequent and very sudden. The highest of the maxima were recorded on the 16th or 17th, when the thermometer rose to 58° over 'England, S.W. and N.W. and the Midland Counties,' and to between 55° and 57° over the other parts of the Kingdom. The lowest of the minima were registered, as a rule, either on the 12th or 13th, and varied from 17° in 'Scotland, E.' to 23° in 'Scotland, N.,' and to 30° in the 'Midland Counties and England, N.W.' In the Channel Islands, however, the lowest reading was 42°.

"The rainfall was rather less than the mean in Scotland, and just equal to it in 'England, N.E. and E.' and 'Ireland, N.' In all other districts there was an excess, that in the 'Midland Counties and England, S. and S.W.' being large.

"The bright sunshine exceeded the mean in all districts except 'England, N.E.' and 'Scotland, W.' The percentage of the possible duration ranged from 30 in the Channel Islands, and 27 in 'England, S. and S.W.' and 'Ireland, S.' to 10 in 'Scotland, W.' and 6 in 'England, N.E.'"

CATALOGUES RECEIVED.

- V. LEMOINE & FILS, 131, Rue du Montet, Nancy—Plants and Seeds.
 W. & WOOD, Coldstream and Dans, N. B.—Nursery Stock.
 W. W. WOOD, Wem, Shropshire—Sweet and Culinary and Flower Seeds, &c.
 J. NURSERIES, Roupell Park, West Norwood, London, S.—Seeds, &c.

NOTICES TO CORRESPONDENTS.

BEST SIX AND TWELVE ROSES INTRODUCED SINCE 1896: *J. Miller*. A great authority on Roses says:—"It is too soon for any amateurs, I should think, to speak with confidence of the merits or demerits of Roses introduced since 1896. I would never give a character to a Rose without two years' personal trial at least, and should like more. Again: the system of cultivation pursued in your country under glass, treating the plants as annuals, worked maidens in pots, cutting the blooms, budding from the wood afresh, and then throwing away the plants every year, is one of which I have no experience. And as I have a strong opinion of the idiosyncrasies of Roses, of the different manners and customs of the several varieties under different modes of treatment, I could not say of any Rose for certain how it would answer under the American system."

BOOKS: *R. Miller*. Edwin Molyneux's work, *Chrysanthemums and their Culture*, is undoubtedly the best publication on the culture of this flower.—*The Book of the Rose*, by the Rev. Foster Melliar, will probably meet your wants. *Tree Fern*. A good work is Dr. Karl Schumann's illustrated *Monograph of Cactaceae, with Cultural Notes*, by M. Karl Hirscht. It is published in ten parts, by H. J. Neumann, of Neudamm, at 2s. per part. Obtainable through Messrs. Williams & Norgate, Henrietta Street, W.C.

CHRYSTANTHEMUMS FOR MARKET: *R. Miller*. The best six early-flowering varieties are Madame Desgranges, white; Mrs. Gifford, pink; M. Gustave Grunerwald, pink; G. Wermig, yellow; Source d'Or, bronze; Roi de Precoces, red. Six mid-season varieties, Elaine, white; Phobus, yellow; M. W. Holmes, rich crimson; Mrs. W. Filkins, golden yellow, thread petals; M. Freeman, pink; Annie Clibran, rose pink. The best six late-flowering varieties are L. Canning, white; W. H. Lincoln, yellow; Red L. Canning, red; Golden Gem, bronze crimson; Léon Frache, pink; M. E. A. Carrière, pink. The six best new varieties, Mrs. W. Mease, sport from Mme. Carnot, primrose; Mary Molyneux, rosy peach; Mrs. Ritson, white sport from Viviani Morel; Lady Hanham, golden, rosy-carise sport from Viviani Morel; Robert Powell, terra-cotta bronze; Julia Scaramanga, rich bronze terra-cotta.

CUCUMBER-HOUSE: *C. C.* Scour the woodwork with soap-suds, in which $\frac{1}{2}$ pint of petroleum may be mixed with every 3 gallons; or use Gishurst's soap and hot water, at the rate of 4 oz. of the former to 1 gallon of the latter. If fungus be present in the staging, you might destroy it by excessive drying, or the use of salt whilst the wood is damp. The better plan would be to throw it away.

CYPRIPEDIUM: *H. J. R. Florence*. Your suggestion that the two *Cypripediums* are between *C. villosum* and *C. Crossianum* is most likely correct, and the manner in which they vary seems to support the contention. The darker No. 1, seen by itself, would be taken for *C. pavoninum* (*C. villosum* × *C. venustum*); but the other is near to *C. Crossianum* (*C. insigne* × *C. venustum*). In one, the secondary cross is suppressed, and in the other developed. The *C. insigne* variety sent certainly is peculiar in the particulars you mention, but it is not a showy form.

FUNGUS IN MUSHROOM-BED: *McK.* The little white Agaric found on Mushroom beds is *Pleurotus mutilus*, which is always comparatively rare, and is usually found on the ground in grassy places. Probably the mycelium was introduced to the bed with the soil. It is perfectly harmless. *M. C. C.*

GRUBS ON CYCLAMENS: *G. H. S.* The grubs are those of one of the commoner and most destructive. Trap them with slices of Carrot laid about, and go round at night and capture them.

* LINDLEY LIBRARY.—We have received from "Alpha" the sum of 10s., to be devoted to the Catalogue Fund. We learn that the only copies of the Year Book or Horticultural Directory in the Library are those for 1870, '77, '84, '89, '90, and 1891. Readers having copies for which they have no further use might kindly send them to the Library, as they contain lists of plants introduced each year which will hereafter be valuable for reference. The Trustees will thankfully receive contributions of money or of books to increase the value of the Library and secure its proper maintenance.

NAMES OF FRUITS: *B. B., Exeter*. 1, Vicar of Winkfield; 2, Winter Nelis (?).—*J. B. Tibbette*. Probably, Apple Wareham Russet.

NAMES OF PLANTS: Correspondents not answered in this issue are requested to be so good as to consult the following number.—*J. H.* 1, *Pinus excelsa*; 2, A golden variety of *Thuja occidentalis*; 3, *Picea pungens*, green variety; 4, *Picea polita*; 5, *Picea Morinda*; 6, *Retinospora plumosa aurea* of gardens, a stage of growth of *Cupressus pisifera*.—*H. E.* The seed-pods may, perhaps, belong to *Acacia riparia*; the other specimen is too scraggy for identification.—*P. C. P.* We regret the inadvertence. 1, Is probably an *Olearia*, send when in flower; 2, *Elæagnus pungens*.—*Ivy*: *T. N.* We are unable to name varieties of Ivy. Consult some nurseryman who makes a speciality of them.—*H. Y.* *Kuonymus europæus*, common Spindle-tree.—*J. P. K.* *Oncidium flexuosum*.—*W. P. N.* 1, *Adiantum Waltoni*; 2, *Davallia hirta cristata*; 3, *Pteris tremula*; 4, *Asplenium nidus* (Bird's-nest Fern); 5, *Pteris serrulata cristata*; 6, *P. serrulata*.—*J. W. McH.* A very finely coloured *Cattleya Loddigesii*.

PLANT ANALYSIS AND SOIL CONSTITUENTS: *D. P. C.* The preponderance of certain elements in the soil, as potash, sulphate of lime, carbonate of ditto, magnesia, oxide of iron, phosphoric acid, exert an undoubted influence on the growth, and consequently on the constituents of such plants as possess these substances in a marked degree in their leaves, stems, roots, flowers, or fruits. But then soils differ greatly, as, for instance, a peaty soil may contain 1.80 per cent. of carbonate of lime, whereas a chalky soil may contain as much as 28 per cent., and the organic matter in the former may equal 64, 66, and in the latter 3.13. We know of no book that would afford analyses of all kinds of garden plants.

RHODODENDRONS: *G. G.* There is no fungus visible; we have often seen similar appearances as a result of drought, and occasionally of lightning.

SLUGS: *J. S. Sulton*. *Testacella haliotides*, concerning which there has been much discussion in these pages during the past few weeks. In an early issue reference will be made to the subject, and illustrations given.

THE NATIONAL CHRYSTANTHEMUM SOCIETY: *X.* We cannot insert your letter, making such serious allegations, unless substantiated by something better than hear-say evidence.

THOMSON'S "GARDENERS' ASSISTANT": *C. O. L.* New edition not yet published.

WEIGHT OF A BUSHEL OF APPLES: *E. P.* The weight is between 40 and 45 lb. for home-grown fruits; Canadian and other foreign Apples are somewhat lighter.

WELLINGTONIA: *J. P.* The proper name is *Sequoia gigantea*, but for garden purposes you can use the commoner name. It was discovered in 1856 on the Pacific side of the Sierra Nevada in California, where it grows to a height of 250 to 327 feet. It was introduced here by William Lobb in 1853, and described by Lindley in these columns in the same year, p. 823. The largest tree recorded in the Report of the Conifer Conference (*Journal of Royal Horticultural Society*, vol. xiv., 1891), was one at Shanbally, co. Tipperary, which was then 80 feet in height. Several specimens were mentioned at that time as having reached 70 feet, among them that at Orton Longueville.

COMMUNICATIONS RECEIVED.—*J. A.*—*M. Schuster*.—*L. C.*—*P. W.* (with thanks).—*G. H.*—*C. T. D.*—*D. T. F.*—*Strathfieldsaye* (next week).—*W. P. N.* (next week).—*W. P. N.*—*J. W.*—*McH.*—*A. A. Chancellor*.—*R. W. G.*—*H. G. S.*—*F. W.*—*R. D.*—*W. K.*—*W. S.*—*J. R.*—*J. Lowrie*.—*H. M.*—*S. A.*—*J. Anderson*.—*E. C.*—*W. R.*—*R. H. P.*—*J. S.*—*C. W.*

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(For Markets see p. viii.)

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